Summer Internship 2020

Final Report - PHASE 2

Research Project

On "*Comparative study of plan of organization for quality and quality policy of manufacturing and service organizations*"

SUBMITTED BY:

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SUBMITTED TO:

Prof. Himanshu Chauhan

In fulfilment of the requirement for the Summer Internship during the program

MBA (FT) 2019-21

INSTITUTE OF MANAGEMENT, NIRMA UNIVERSITY, AHMEDABAD

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Research Project Title	Comparative study of plan of organization for quality and quality policy of manufacturing and service organizations
Domain	Operations (Quality Management)
Duration of the research project	18 May 2020 – 18 July 2020
Faculty Mentor	Prof. Himanshu Chauhan
Domain Mentor	Dr. Rajesh Kumar Jain
Purpose of the Report	This research project should be helpful in understanding of the setup that different organizations have for quality management. The inter relation between different departments will be studied. Also, similarities would be drawn between them and it will be seen whether they are all same or not among different sectors.
Date of Report	18th July 2020

ACKNOWLEDGEMENT

For the making of this report and also in carrying out the research work related to the report, I would like to thank my gratitude and sincere obligation to all of the members who helped me directly or indirectly in this. Without their continuous help, motivation, guidance and encouragement, I would not have been able to make this progress at this pace.

To begin with, I would like to thank Dr. Rajesh Kumar Jain and Institute of Management, Nirma University, for giving me this opportunity to carry on this research project. The topic provided was extremely good, and in line with the industry trends in the area of Operations. It will without any doubt, prove to be extremely beneficial to me in all of my future endeavours and in real life corporate world.

I am thankful to my faculty mentor, Prof. Himanshu Chauhan, for his all the round guidance and support in carrying out this research and presenting it in this report. He was really helpful and took initiatives to know my approach in doing my project.

I would also take the opportunity to acknowledge the love and support received from my family and friends, who in these hard times, have always stood by and provided all the support in whichever way it was needed. Overall, it was this secure feeling, that always gave the strength to go ahead easily.

UNDERTAKING

I, Ravi Thakur, Roll No. 191140, from MBA FT 2019-2021 Batch, hereby declare that this research work submitted to Institute of Management, Nirma University, is my original work and has been done solely by me under the guidance of my domain mentor Dr. Rajesh Kumar Jain, Head- Operations Management, and my faculty mentor Prof. Himanshu Chauhan.

This project work has been submitted in the partial fulfilment of the requirements of the Summer Internship 2020, which is necessary in order to progress further into academics. This is the complete research project report and various secondary data sources have been used and all of them have been cited under 'References' chronologically. I also declare that this project or any part of this project has neither been submitted to any other colleges or universities, nor done by any other student earlier for the award of any degree.

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Executive Summary

A research project is a kind of a scientific endeavour to answer a research question. This research project is an institute assisted research project and will be in the quality side of operations domain and it is an exploratory research. This report aims to study the organization of quality and its policies in two main sectors of an economy – the manufacturing sector and the service sector. Three organizations have been chosen from both the sectors and a thorough study has been done to understand the working of their quality departments and how they work inter department wise in all. An attempt has also been made to try to generalise the organization chart according to the sectors, so that it can be used to get an overall idea of any company within that sector.

The key to success in winning the global battle now and in future is to have high standards of service. Therefore, it is helpful for organizations to know about the customer service quality perceptions in order to overcome their competitors and attract and retain the customers. And also because of the globalization and liberalization of Indian economy, Indian manufacturing and service sector has been opened for multinational companies.

The findings of the report show that the quality policies of a manufacturing organization are directed towards their product, i.e., having zero defects in their product, while that of the service organizations is focussed on customer satisfaction, as customers directly take the service and the employees are responsible for providing the same. They strive to give their service in the best way so that all the customer needs are taken care of, basically we are talking about customer service. More or less, if we look holistically, even for manufacturing organizations, products of good quality will lead to customer satisfaction only. Plus, in addition to this, many of the manufacturing companies also take into consideration the environmental impacts and try to make sure that there is no to minimal harm to the nature. While on the other hand, service organizations, depending on what kind of domain they are working in, they too have these additive quality principles incorporated in them. The Organization Quality chart also varies from company to company, and even if a generalised one can be created for a sector, but inside the sector it can differ greatly based on the type of company we are looking at, and the same applies for Quality Management Systems deployed by these organizations.

Introduction

Nature of the problem

First of all, it is important to understand the meaning of quality policy. What is it and why is it so important for an organization?

In organizations and management systems, a quality policy is nothing but a document which is incorporated by the management to implement the directive of the highest management of the company with regards to quality. Management of Quality policy is more of a strategic term. Section 5.2 of the ISO 9001:2015 standard says that it requires a well-written and well-defined policy that can be communicated and understood with due diligence within a company. Some requirements of quality policies are also set out by the same standards.

Here, in this research project, the same will be studied for various companies from two different sectors- manufacturing and service. It is important to know what are the major distinguishing lines between organization of quality in these two different sectors. Also, within the same sector, what are there major differences outlining the plans of organizations for the same?

With these considerations, and to answer these questions along with valid proof, after doing secondary research on the same, is the main purpose of this research work.

Gap in knowledge

Widely speaking, research gap can be considered as a missing piece of literature that has not been explored yet, or is under explored. It is something which has so far not been addressed to the fullest, so that it makes proper meaning and can be used henceforth. Considering this research project, the approach towards the research gap could be as follows.

A person working in an organization might know the inter department workings of his organization and how the quality is handled in his organization. Most of the times, we do not have a comparative in depth view or even overview of these things for two different organizations at the same time, or for two different sectors. It is only when we switch from one organization to the other, we get to know about its organization and plan for quality and quality management and principles. Keeping this part in mind, this research project would try to remove that knowledge gap and would aim to make it easier to understand the same for different companies across two major sectors- manufacturing and service.

Objectives of the study

As a part of the research work, following objectives would be tried to work upon and deliver the results:

- Understanding of quality policy and quality organization
- Scanning through various secondary online sources for data gathering
- Inter relation, reporting and impact on different departments
- Comparison and drawing inferences after study of various organizations

The first three points can be considered as the basis to reach the fourth point. Since the research topic is comparative study of the plans of organization, the fourth point would be the final objective of the report. Analysis and similarities would be drawn from the same result.

Utility of the study

The findings of this research work ca be used in framing of plans of organization for quality for new companies and startups. But over and above all, since the main aim is to do a comparative study between the sectors, hence the exploration can be used to build a base for further research works and to also to come to a more concrete conclusion so that the generalised idea presented here can be converted into a more specific one.

Methodology

Approach (Quantitative vs. Qualitative)

The meaning of qualitative research is to explore, describe or understand the reasons for a certain phenomenon. One of the main characteristics of this research is that this is loosely structured and open to interpretations and presumptions.

While in quantitative research approach is used, when the data that is under study has to be quantified and subjected to a suitable analysis.

Sources of the data (Primary and Secondary)

Primary data is original, problem or project specific and collected for serving a particular purpose. Its authenticity or relevance is reasonably high. But at the same time, the monetary and resource implications for this are also very high and sometimes the researcher might not have the resources or time to go ahead with this method. An example can be Government Census, which is collected through primary source and is a Quantitative approach.

Secondary data, as the name implies, is not entirely topical or research-specific. It can be economically and quickly collected by the decision-maker in a short span of time. Also, it is comparatively less expensive than primary source of data collection. For this research work, secondary data collection method would be used. This data collection also has some numerous advantages over primary data, some of them being:

- Resource advantage
- Accessibility of data
- Accuracy and stability of data
- Assessment of data

Method of data collection

As it has already been mentioned above that the sources of data for this research would be secondary sources, it is also worth noting that in most of the cases, past studies on the subject make the current study simpler, as the researcher can make use of the findings of the earlier studies. Similarly, even for this research project, along with secondary data sources, emphasis would also be put upon other researches, if any done previously, which would be if at all relevant to this study. Their findings and conclusions would be compiled to mould the findings

of this research accordingly. The secondary sources would include the websites and officially published documents of the companies, news articles, quality awards and certifications, etc.

Size of samples and method of sampling

Sample size simply means the number of subjects included in the sample. It is used to describe a group of subjects that are selected from a wider one and is considered as a representative of the rea population for that specific study. Since this corresponds to quantitative approach of research, this would not be really relevant in this research. The size and amount of data collected would depend on the secondary sources, meaning how much relevant information is available on them. Then, the most trusted sources would be chosen first and given priority over the others, say for example, the company's websites and its published reports. Same would be done for all the six companies.

Method of data analysis

It is the process of systematically applying statistical or logical techniques to evaluate, analyse and describe the data that has been acquired in the process. Mostly, different tools or software are used to analyse and process the data into statistical or presentable form, visually. But since this mostly refers to the quantitative data, it will not be used in this report. This is an exploratory research and the data that would be collected is not going to be quantified, there would not be usage of any tools or specific techniques for data analysis. It will totally be compared on the basis of the theoretical information available from the secondary sources. All work would be done manually, including the interpretation and analysis part.

Context of Industry Problem

Manufacturing organizations

Quality management is about making companies perform for their stakeholders – from improving products, services, systems and processes, to making sure that the whole organisation is fit and working effectively.

The three companies that have been chosen for the comparative study in this research work from this sector are:

- CEAT (Tyre manufacturing)
- Nestle (Food and Beverages processing and manufacturing)
- ABB (Electrical/Heavy equipment manufacturing)

Service organizations

Service organizations are the one which provide any particular service and are characterized by high client interface, may require customizations, require interpretation and perception and high variability. The services offered are intangible. They too follow quality management principles to ensure all the standards and compliances are met.

Quality in service organizations means meeting agreed requirements between organization and customers, fulfilling legal requirements and fulfilling company's own requirements. Whereas the core purpose of quality can be considered as customer satisfaction and consistency of production or service (in case of product related service organizations)

The three companies that have been chosen for the comparative study in this research work from this sector are:

- Sodexo
- TCS
- Airtel

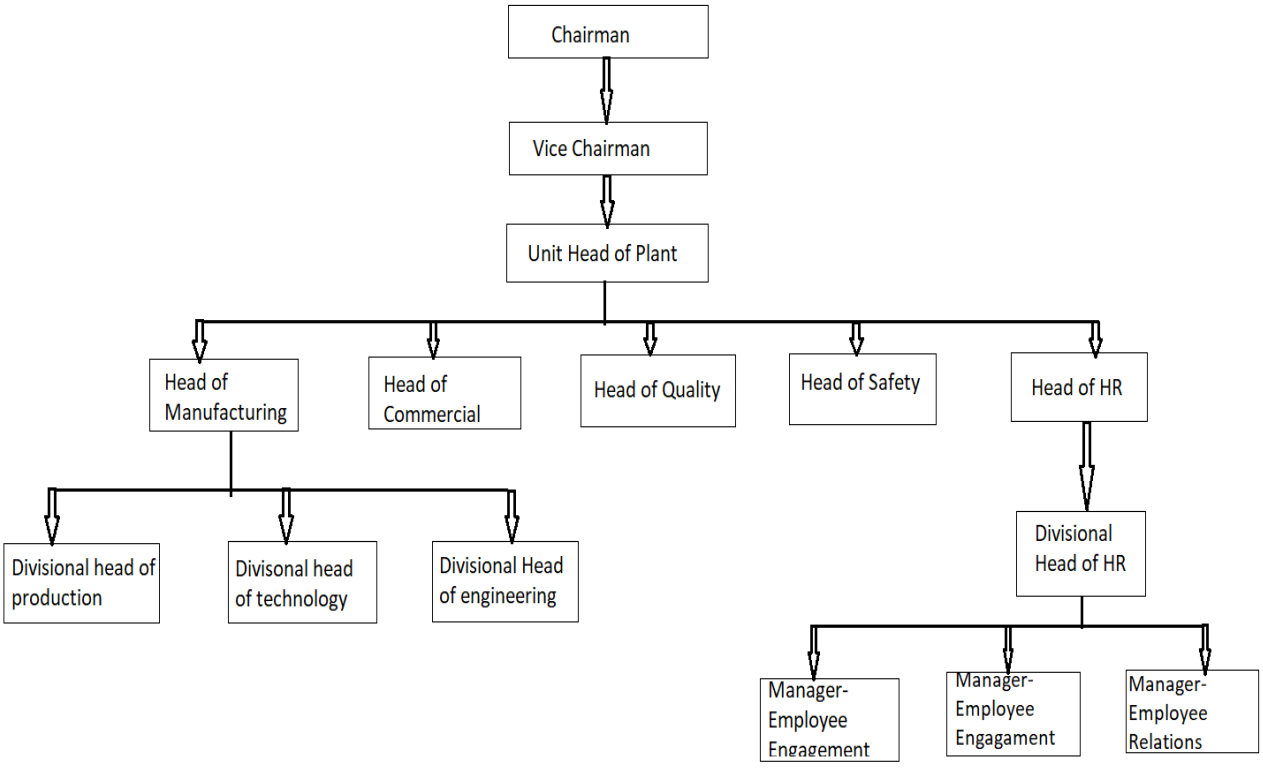
The industry problem mainly deals with what type of Quality Management Systems should be deployed so as to ensure that the adopted quality standards are fully taken care of, and the goods and services provided are of the highest standards.

Presentation of data

1. CEAT

Mumbai head-quartered **CEAT** is the flagship company of the over Rs 22,000-crore **RPG Enterprises** and it was established in 1958 (on 10 March 1958, the company was incorporated as CEAT Tyres of India, in Mumbai). RPG Group is one of the largest industrial conglomerates in India. With more than 15 companies under its belt, the group has a strong presence across core business sectors like Infrastructure, Tyres, IT and Specialty.

The organization chart for a typical tyre company is as shown below. It can be seen that quality falls directly under the unit head of plant, or Plant Head. It is not a sub division under other divisions. This shows the importance that is given to Quality in such companies.

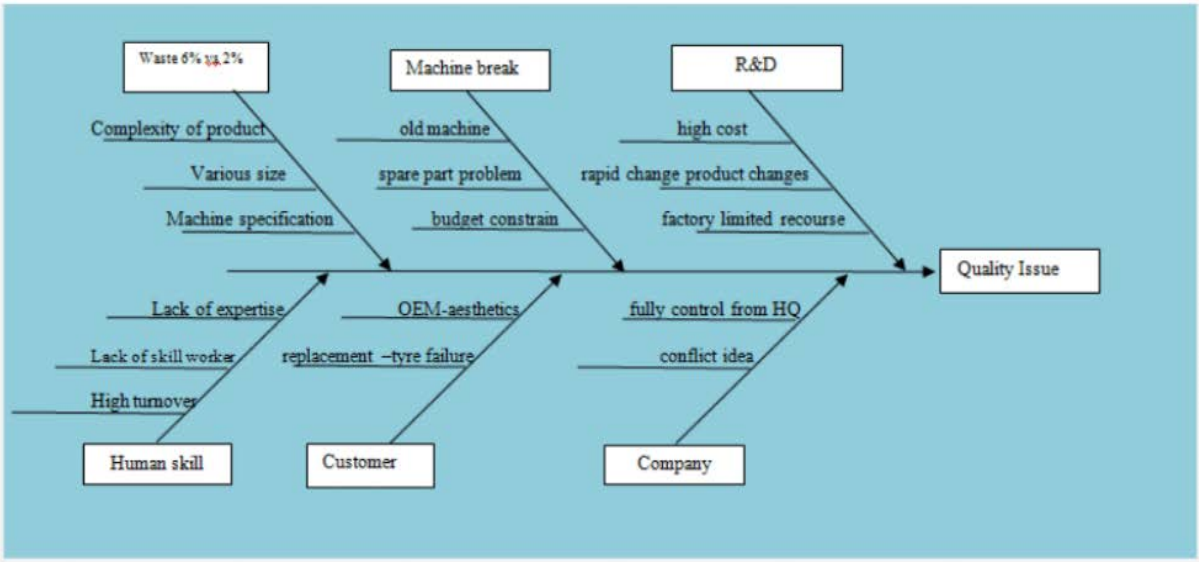


Talking about Quality policies in CEAT Tyres, the official CEAT Speciality website states that CEAT'S quality assurance system is based on the ISO 9001:2015 quality management system and in-house quality standards that cut across all prevalent tools in order to ensure the "First Time Right" (FTR) principles on processes and products.

They have also been awarded the coveted quality accreditation of the Deming Prize for successful implementation of TQM processes in its management philosophy, scope/type/scale of business and management.

CEAT follows quality-based management (QBM) as a principle of management for the entire organization. It consists of philosophy, tools, techniques and systems from Total Quality Management (TQM), Total Productive Maintenance (TPM) and Toyota Production System (TPS).

The Fishbone diagram showing how quality issues arise in a tyre manufacturing company is as shown below, that are then taken care of and managed with due diligence:



Quality Practice

There are several quality initiatives that have been practiced in their work culture to ensure the quality up to the standard in producing the tyres.

Kaizen (Continuous improvement)

Quality circle

Process Improvement Team

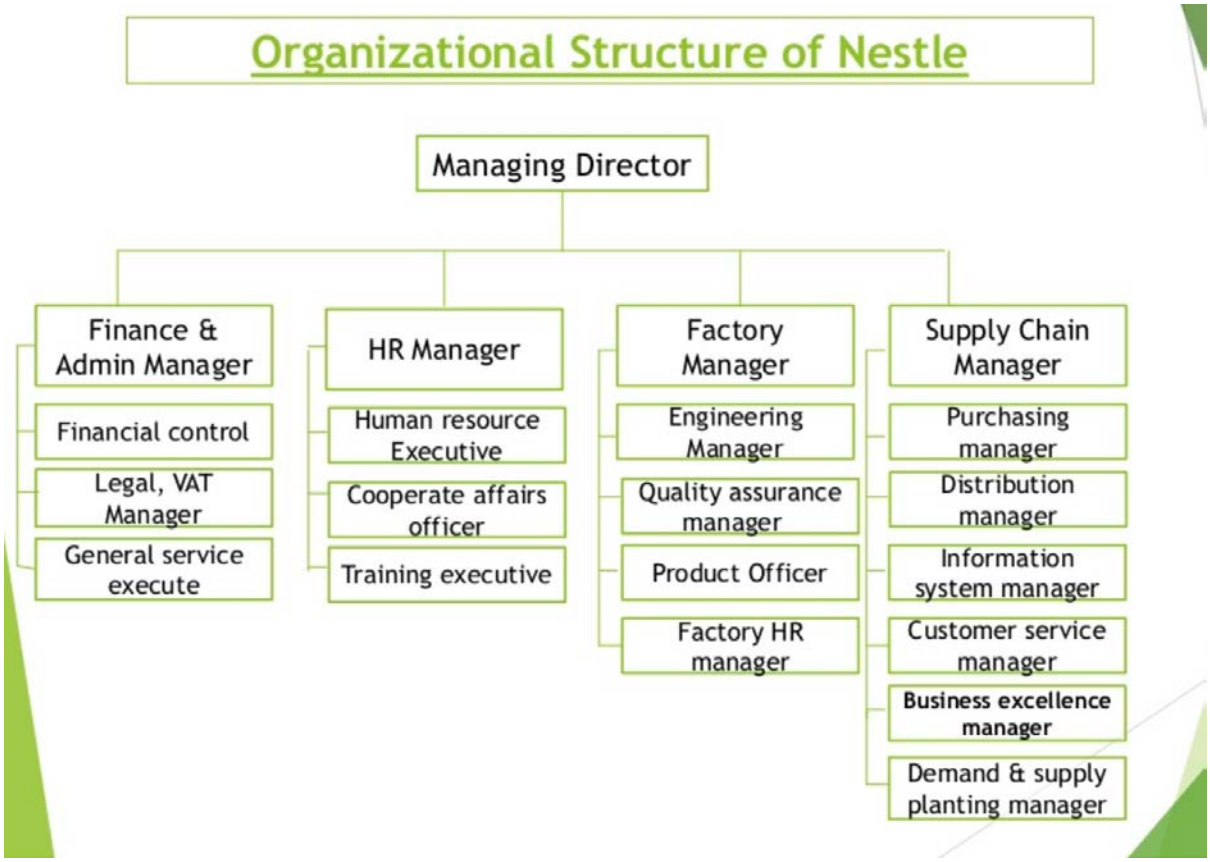
5'S Workplace Organization Methodology

Customers Service Index

2. Nestlé

Nestle is the world's largest food and beverage company having more than two thousand brands, right from the ones known globally to the local favourites.

The organization chart for the company is as shown below:



As it can be seen from the chart, the quality department is there at their each and every manufacturing outlet and reporting is done to the factory manager. The Quality assurance manager has the work of audit of the same to ensure the best processed food products are made.

Quality is an integral part of Nestlé's Corporate Business Principles. These are the principles that guide their actions to deliver products and services that are safe, compliant with the standards and preferred. They are essential for the achievement of the company's ambition to be recognized and trusted as a one that offers products and services that enhance the quality of life and contribute to a healthier future. At Nestlé, their commitment is to never compromise on the safety, compliance and quality of their products and services. This requires everybody to be constantly engaged, to understand the responsibility that they have and to be empowered to take action in order to protect individuals and families, the company's customers and their brands.

The Quality policy at Nestle gives a summary of the essential and core elements, showing their commitment for excellence. It includes:

- Fostering a quality mind-set with the objective of developing, manufacturing and providing their products and services with nil defects, that are trusted and preferred by individuals and other families and that deliver on their promise to enable healthier and happier lives.
- Compliance with the relevant laws and regulations as well as internal requirements.
- Continuously challenging themselves to improve the Quality Management System so as to guarantee product safety, prevent quality incidents and remove defects by the review of quality.
- Encouraging participation and promotion of quality responsibilities for all employees and others through standards, education, coaching and training, supervision and proper communication.

At Nestlé, teamwork, engagement, ownership and support by everyone are vital for achieving The company's quality objectives. In lieu of this, they are committed to providing the required leadership, management and resources and hence ensure that the Quality Policy is reviewed annually and communicated to the employees and third parties. At its core, Quality is first and foremost about trust in the company's products, services and in their brands. But Quality is also more than this. It is about delivering what is promised in everything they do.

For effective value creation and thereby building trust efficiently, Nestlé does the following:

1. It guarantees full **safety of product and all-round full compliance** by respecting their standards, principles and internal policies with utmost transparency,

2. Strives for **zero defects and no waste** by constantly looking for opportunities to apply their continuous improvement approach to deliver the required competitive advantage, and

3. Engages **everybody's commitment** across their complete value chain and at all levels of the company to build the Nestlé Quality mind-set.

Nestlé Quality Management System

From farm to fork

Working together with farmers in rural committee to improve them improve their production and adopt environmentally sustainable practices.

Quality by design

It is built during product development according to the requirements of the consumers.

Better Manufacturing Practices

It is something which covers all aspects of manufacturing, including standardised operating procedures, system of people management, equipment training and maintenance and handling of materials.

Hazard Analysis and Critical Control Points

They apply internationally recognized HACCP (Hazard Analysis and Critical Control Point) system to ensure food safety. This is a preventive science-based system.

Consumer Use

Products carry information that they are used safely with the highest level of quality.

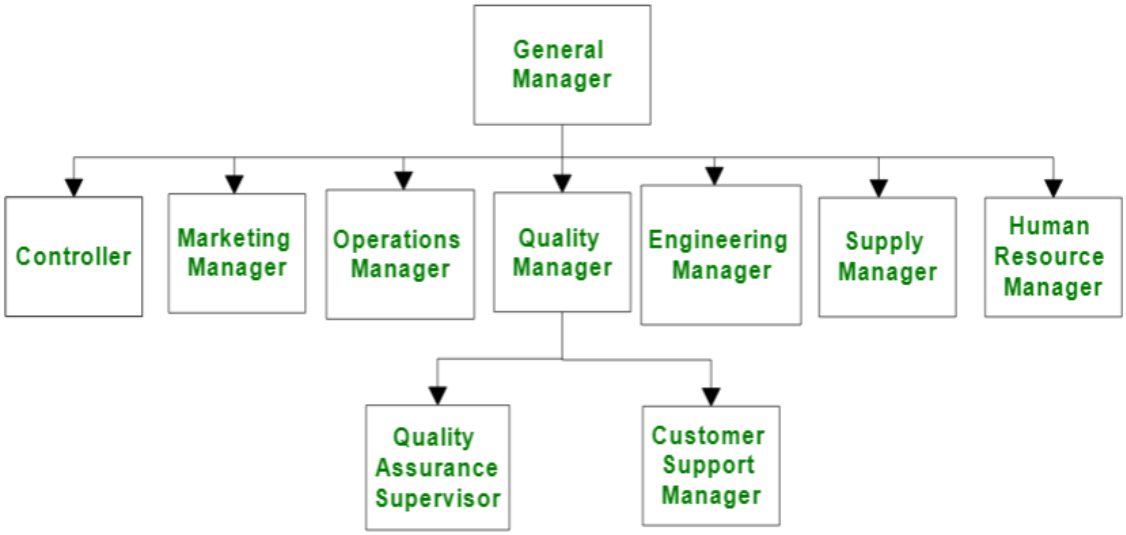
Consumer services

Their worldwide consumer services organization ensures that they can immediately respond to any consumer inquiry, question or concern.

3. ABB

ABB is Swedish multinational corporation having various manufacturing locations in India. The company corely operates in the field of robotics and automation, power and heavy industrial and electrical equipment. It is a pioneering technology leader that works closely with utility, transportation, industry and infrastructure customers.

The organization chart of ABB is as follows:



Quality Policy

ABB Quality policy states that there are multiple dimensions in which the company can compete with its competitors, but apparently none of those become meaningful for their customers without the core foundation of quality. The organization quality responsibility is one thing that must be with owned by every employee, client, and every manufacturing location.

The quality policy applies to all the levels in the organization. All deliveries should meet or preferably exceed the customer's expectations – through the entire business process, from orders to final deliveries and use of our products, systems and services.

To ensure that the company meets their responsibilities and obligations towards their customers, people, partners, suppliers and to their shareholders, the company is committed to the following quality objectives:

- Deliver on-time and on-quality products, systems and services that meet or exceed their customer's expectations.
- Identify and understand the customer's expectations, measure customer perceptions, and implement improvements to increase customer satisfaction.

- The people and the company's customers must enable and engage in a high-quality drive that provides value chains right from their suppliers to their end users.
- Increasing the soft skills and providing the motivation to their employees, which in turn would add value to their customers and their businesses.
- Leverage their partners and suppliers' strengths to improve their products and their businesses from product design through production, installation and operation.
- Embed social responsibility & company ethics policies in business practices.
- Continually improve environmental, health and safety performance through all products, operations, systems and services.

How it is done – Process Approach

All of the manufacturing facilities that ABB has, takes a unique step towards providing quality management. The corresponding plant manager and their hierarchical staff ensure and review the Quality Assurance Program of their plant and manufacturing. Once it is finalized and agreed upon, it is continuously worked upon and reviewed by various means, some are as follows:

How the Management Reviews

Quarterly meetings are carried out bey the authorities as mentioned above, that is the plant director, plant supervisor and the concerned management staff and the Quality supervisor. They are the ultimately responsible for the following things

a) They analyse and identify the flows and processes that are essential for the quality management and its thorough application everywhere

b) Next step would be to identify which all processes would be in line after the other

c) next step is to figure out the parameters and methods so as in order to ensure the effectiveness of operations of the plant as well as the control

d) Next step would be the collection of information necessary to support the manufacturing and operational activities

e) Systems like SCADA, to monitor and analyse the ongoing processes

f) Next step includes formulating and executing the planned actions for continuous improvement of flow and processes

Quality Council

Review of the occurred audit results, inspections, warranty information and then a review of both internal and external reported conditions perceived to be averse to quality. Corrective action assignments and follow up are reviewed at each meeting. (meeting every 2 weeks).

Non-conformance Material Report Review (NCMR)

Review of rejected materials with reports distributed to appropriate management or supervision for review and corrective action is done.

External Audits

Review of audit findings and corrective action identified from customer or supplier audits (as required).

Internal Audits

Review of audit findings and corrective action identified during internal Quality System audits.

Product Integrity Committee

Review of product performance reports (as required). Records of meeting minutes, documentation or any resulting Product Advisory Letters (PAL) are maintained in files in the QA department.

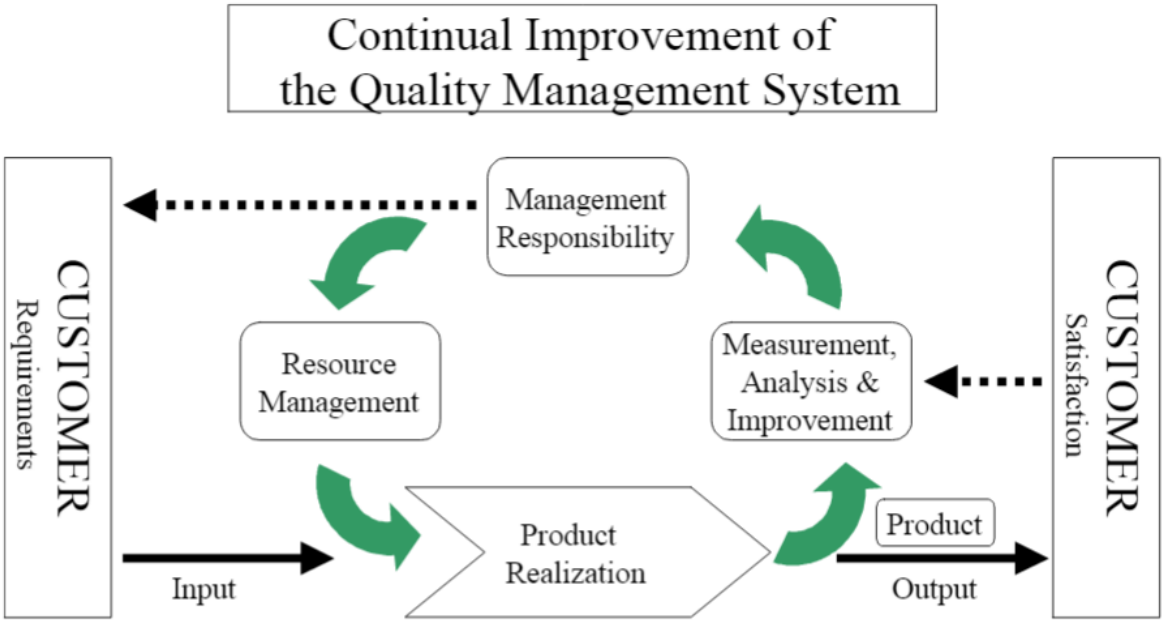
Training

Trainings and seminars play an important role in imparting the on the job knowledge about Quality and quality assurance related programs for supervisors and quality assurance managers. On the job training covers many parts of the Quality Control and they are the ones that are applicable in fulfilling the responsibilities of these quality assurance managers. Also, a log of the same is maintained, which states the recent participation and qualification of each employees in the quality domain, also showing all the recent seminars and trainings attended.

The Management is fully responsible in creating, establishing, implementing, executing and monitoring continually to create an effective quality management system that complies with the ISO standard for quality.

The Quality Management System is implemented in reality by using an approach that is directed towards management of process.

The following pictorial representation depicts how the company vouches to translate the requirements of the quality related standards of ISO 9001:2000 into its organizational processes.



Quality Manual

This manual explains the scope of the QMS at all of the manufacturing sites of ABB.

Quality Policy

Organization's quality policy is described by this and this subsequently also provides a framework for implementing quality objectives and reviewing them.

The Quality Assurance Procedures (QAP)

It is a compilation of and includes all the details about instructions and required procedures for all the aspects of the quality control, assurance programs, tests and inspection under ISO 9001.

Engineering Procedures (ESP)

They are the procedures that are used for new product development, their design control, etc. As ABB is an electric heavy company, the document covers product qualification and mechanical and electrical standards.

Manufacturing Procedures (MSPs)

They are the procedures for manufacturing, process control, maintenance, production planning, etc. for production personnel. Detailed test and calibration procedures for all products to assure conformance to published specifications.

Supply Management Procedures (SMPs)

Are the procedures for procurement and control of purchased material.

Order Entry/Contract Review Procedures (MSPs)

Are the procedures for order entry and contract review for special customer requirements.

Quality Records

They are the records that provide evidence of conformity to requirements and to the effective operation of the quality management system.

Quality Manual

The Quality Manual includes the following:

a) The scope of the quality management system, including details of and justification for any exclusions,

b) The documented procedures established for the quality management system, or reference to them,

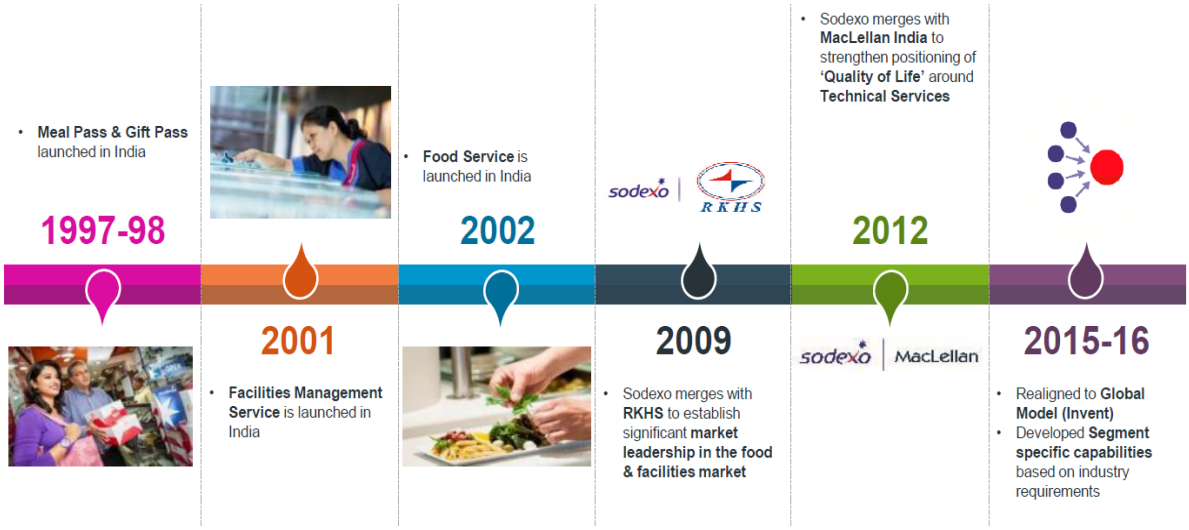
c) A description of the interaction between the processes of the quality management system.

Service Organizations

1. Sodexo

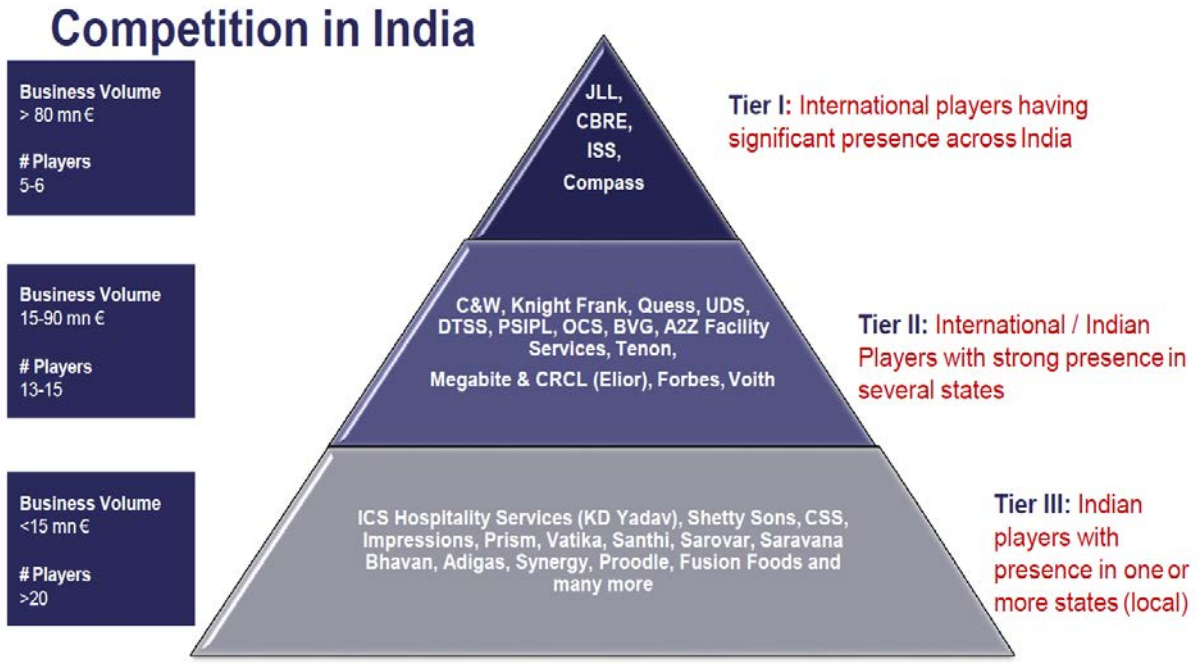
Sodexo is a Quality of Life service provider and Sodexo India provides a bouquet of more than 100 service offerings to various companies, healthcare organisations, manufacturing locations and schools and universities. Their solutions include food and catering, facilities management, technical services, project management, workplace experience, energy management and benefits and rewards services. All of the company's solutions are aimed to improve the Quality of Life of their consumers, clients, employees and the communities at large. It is their ongoing effort to evolve with the changing needs of the consumers. To do this, the company associates with start-ups to bring innovation into their services; and consequently, digital convenience in the life of their consumers, with unfailing emphasis on a sustainable universe.

Sodexo India's journey



Sodexo India Onsite Services – A snapshot

- 1400 sites
- 48000+ employees
- 400+ clients
- 6,00,000 meals served per day
- 140 million square feet of space managed
- 1 million consumers served daily



Sodexo's Quality policy

Shown below is the actual Quality policy document of Sodexo India. The policy reads out the objectives and the authorities that would be involved in it to monitor and to see that the objectives are fulfilled.

Quality Policy

It is the stated quality policy of Sodexo Remote Sites to satisfy the requirements of our customers and clients in every way we can. This can only be achieved by operating a comprehensive, co-ordinated quality system, which assures the quality of all services, products and processes offered by the company. This system is designed to meet the requirements of ISO 9001:2000 and is implemented across our entire company and embraces all activities which impact upon all who come in contact during the provision of our services.

The Divisional Director and all senior managers of the company are committed to ensuring that the system is effective in achieving quality and satisfying customers both now and in the future. To this end, we will strive to continually improve upon services, products and processes and our quality management system.

We will set quality objectives, which will be measured against and reported upon. Financial costs associated with these objectives will be attributed wherever possible.

These objectives include:-

Customer satisfaction and complaints/feedback handling

Compliance with relevant regulatory and industry standards

Waste reduction and energy efficiency

Continuous improvements to the system

ISO 9001:2000 standards delivered at all locations

Every onshore and offshore location to receive an Internal Audit annually

To foster a culture of continual improvement the company will continue to recognise and reward effective teamwork and individual achievement and will review its services, products and processes continuously. We invest in people and embrace service excellence standards, our emphasis on training acts as a testimony to our commitment in this area.

A Quality Management Representative has been appointed who reports directly to myself, in the absence of the management representative a deputy has been nominated.

Since Sodexo is the provider of Quality of Life services, and meals served is one of the main areas where they work upon, they rely heavily on audits to see that each of the things are maintained properly.

Various measures that are followed at every Sodexo site for maintaining proper hygiene and quality of the final offering that they make as well as the reasons for it are mentioned below:

Steps Taken	Reason
Every Sodexo India employee to undergo Swagat within 7 working days of his/her joining the organization	To Ensure every new joiner is to be made aware about the company, Job role, Do's and Don'ts, Work Safety and Food Safety practices
No employee should be deployed at site unless in full uniform and PPE	To ensure Employer branding, pride of association & employee safety is a prime focus which needs to be ensured through issuance of Uniform to all new joiners on the date of joining
Every Sodexo India employee will be nominated a Dost on the first day of the work	To make the new joiner feel at home by providing him with adequate information about Sodexo, site operations, HR practices, help in obtaining Uniform, accommodation details etc. by a designated DOST
Each site will conduct a Town Hall meeting once every quarter and include operational managers	To have open and healthy discussions on site with employees to resolve their concerns, issues and also update them about latest developments in the company, our core values, ethical principles and conduct R & R during this Town Hall function
All Site to ensure resolution of employee concerns in effective manner through compliance to EAR process	To ensure effective & timely resolution of employee concerns and have satisfied and motivated employees at site.
All existing employees at site are issued Uniform (3 sets) every year	All existing employees at site are issued Uniform (3 sets) every year

As per the conversation held with Regional HR Head, internal audits happen every month, wherein they visit their suppliers to check how well they are maintaining their offerings and whether there is any gap in the model that they follow. If any such thing is found, accordingly actions are taken because ultimately it would affect the quality of service being provided to their clients, and then that is what they are known for.

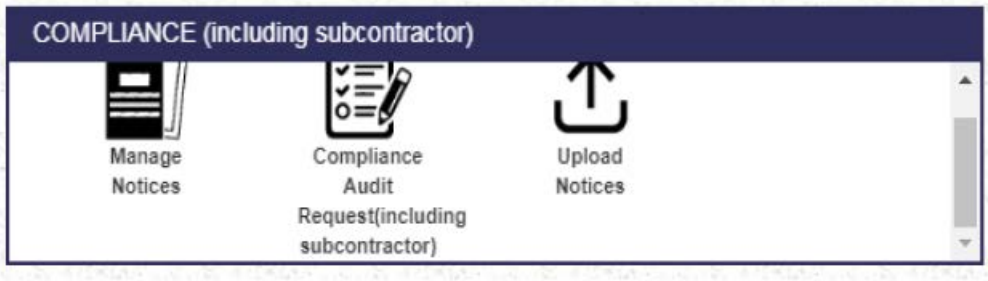
External audits happen atleast once in every three months, that is once more step being taken as an additive measure so as to have a non biased view of the processes being followed.

Apart from this, they also offer services such as facility management and project management. Specially looking at the present scenario, with pandemic prevailing everywhere, the company has to take utmost care in sanitization and other related hygienic and quality tasks, specially at their healthcare sites.

Compliance Automation is one more step taken in this direction of maintaining quality. This is because in service organizations, finally the service is being offered by the employees themselves, unlike in manufacturing companies where the employees have to handle the machines that make the product. So, keeping employees motivated and seeing to it that they their workplace issues are resolved is one important aspect of this.

In Compliance Automation, there is one compliance portal on AccessHR, where the manager can register compliance audit in 30 seconds and the compliance request is closed in 48 hours. Site managers can track real time status of the compliance audit. This is the way by which site managers can focus more on-site operations and improving the quality of services.

Audit Automation is also gradually being carried out. Request can be raised by site managers or site operation heads for client audit or vendor audit.

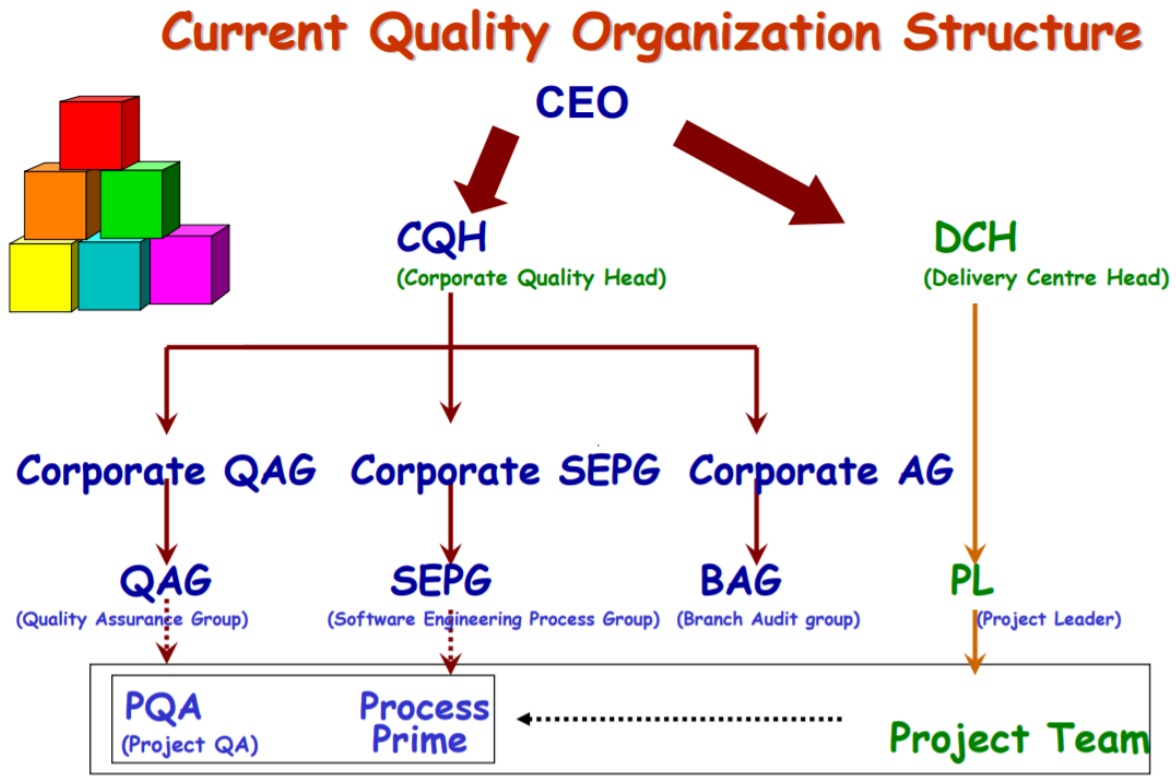


2. TCS

TATA Consultancy Services, more commonly known as TCS, is an Indian multinational Information Technology service and consulting company with its headquarters in Mumbai, Maharashtra, India. It is a subsidiary of the Tata Group and operates in 149 locations across 46 countries. TCS is the second largest Indian company by virtue of market capitalisation.

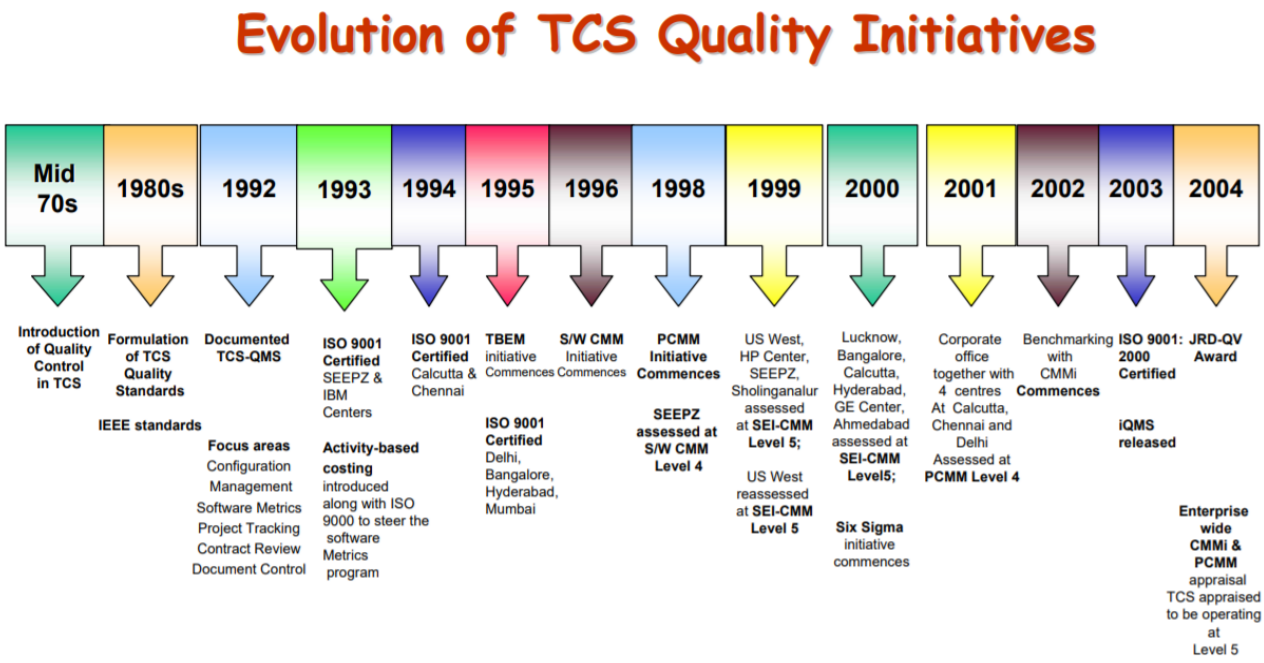
Since TCS is a service organization, quality holds a different perspective in this case and therefore the quality organization is also a bit different from the manufacturing companies.

The Quality Organization of TCS is shown below:

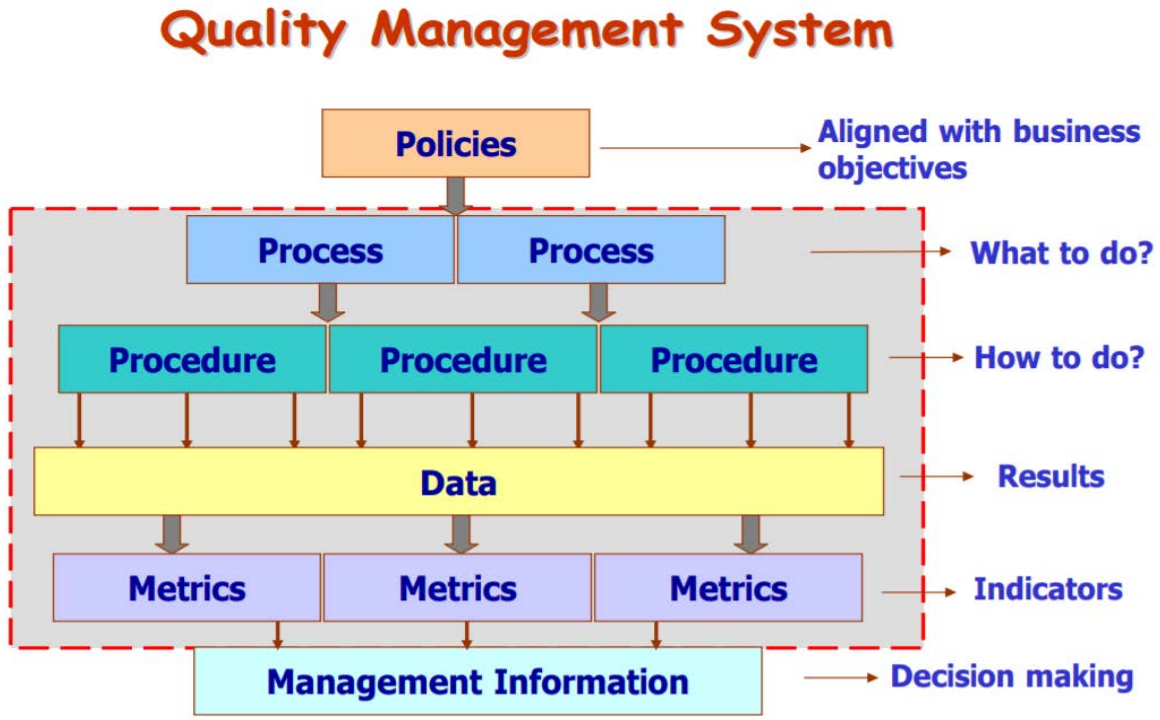


So as seen, there are different quality heads at different levels, and the top one, the corporate quality head, falls directly under the CEO of the organization. Quality starts right from the very bottom, that is the project team and the Project Quality Assurance group looks after it. As we go up the chain, it gets narrowed down to single entity group looking over various groups. This is because all of the projects and leads that have been carried out till there have already been quality tested and therefore one has not to do it from scratch.

Each of them takes care of the different standards that are being followed and under what category the project comes, so all the related quality checks do happen before the final go.



The above figure shows the timeline of when and which different quality initiatives were introduced in the company, and also corresponding awards or accreditations or standards that were followed. Now once all of this known, the most important aspect comes, which is managing the quality standards that have been set and accepted for delivering a service that is fool proof and of the highest standard. The Quality Organization that was shown above takes care of this and follows the quality management system (QMS) as shown below:



The results obtained thus are aligned with the quality goals of the company and this is an iterative process for each of the projects that the company takes.

In the initial days, for any service organization, feedbacks and reviews are the primary source of knowing the gaps in their services that they offered. Gradually when the company has different teams and designations set up specifically for these, then right before the deployment stage, they are quality checked so as to have the highest level of customer satisfaction.

The following table shows what tools and trainings are provided for assuring the same, and are therefore a part of the Quality Management System.

Quality tools	Quality Training
Integrated Project Management System (IPMS)	Initial Training Program
Process Assets Library	Continuing Education Program
Audit Process Tool	Quality Management System for Team Members, Project Leaders
SPC Charting Tool	SPC, Defect Prevention
	Auditor's Training
	Six Thinking Hats

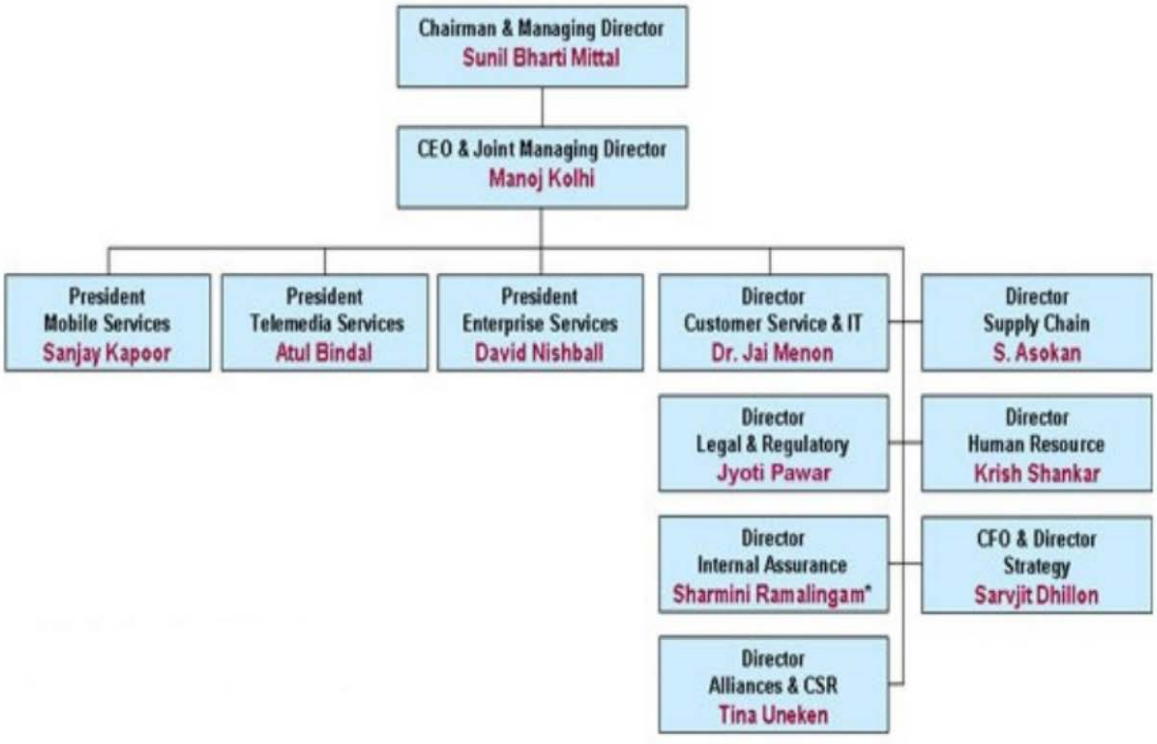
After the implementations of these tools and standards, the following results were seen and are documented.

Area	Improvement
Productivity	Improved by 17% in Oracle projects Improved by 20% in VB projects Improved by 24% in Java projects
Customer Satisfaction	Satisfaction Index improved by 16% Repeat business from Client
Total Defect Containment and Reduction	Reduction in Residual defects by 17%
Rework Reduction	Reduced rework effect by 2 to 1

3. Airtel

Bharti Airtel Limited, also known as Airtel, is an Indian global tele communications services organization based in New Delhi, India. It operates in 18 countries across South Asia and Africa, and also in the Channel Islands. Airtel provides GSM, 3G, 4G LTE, 4G+ mobile services as well as fixed line broadband and voice services depending upon the country of operation. Airtel has also rolled out its VoLTE technology across all geographic Indian telecom circles. It is the second largest mobile network operator in India, trailing behind Jio, and the second largest mobile network operator in the world with over 423.28 million subscribers.

The organization chart for the company is as shown below. The internal assurance team as well as the Presidents of various divisions are responsible for handling the quality. Quality is a very wide aspect for a company that is dealing into services that are running independent of each other. Plus, at the same time, on the sourcing part, the suppliers might be same and then the quality aspect has to be seen mutually by the departments.



Service quality or customer perception about service quality in mobile phone networks is a critical factor which determines the competitiveness of a firm. Quality is a mental perception of customers based on various performances attributes of a service.

Quality Implications at Airtel

They always try to think fresh and innovative ways about the changing trends and the needs of their customers

1. Customer Care

Customer care is one of the key areas in any service company because it is the point where customer dissatisfaction can be converted into customer satisfaction by providing speedy and quality solutions.

2. Billing and order management system

Quality decentralization in comprehensive enterprise wide billing system. Have made numerous enhancements to Airtel's operations.

3. Partner Performance Management

It is a key factor in Airtel's performance and is carried out in two methods:

- Partner score card
- Partner Audit

4. Partner Relationship Management

It focuses on selecting the most capable partners worldwide and continuously working with them to enhance their capabilities of providing conforming services on time. The main criteria for selection is Best Value.

5. Payment Procedure

Ensures that partners get the best payable procedures to ensure invoices are processed effectively.

6. Improving service management

The company realized the importance of removing silos amongst individual processes by implementing an individual suite of tools to improve service management.

7. Application Quality Management

The company offers end to end managed AQM solutions which enable optimum performance of the applications and as a result improved response time.

8. Supply chain management

The supply chain characteristics have been identified and worked upon continuously so as to accomplish the highest quality in service as much of the service part depends upon the supply chain as well.

Supply Chain Characteristics	Airtel's Approach for best Quality
Number and structure	Fewer; clustered
Procurement Personnel	Limited
Outsourcing	Strategic
Contract Length	Long Term
Pricing Practices	Target Costing
Quality	Designed-in
Delivery	Smaller quantities (JIT)
Inventory Buffers	Minimized, eliminated
Production flexibility	High
Technology sharing	Extensive

10. Enhancing the voice quality

This is newly implemented system, which in itself is a revolution because it reduces the background noise spectrally. It eliminates echo and adjusts speech levels.

10. Six Sigma and other relevant tools application

More than one hundred fifty black belts are working in the entire cluster and the company completed six Sigma in 2012. They also use Quality tools such as **Quality Control charts, Fish Bone Charts, Flow Charts, Histograms and Scatter Diagrams.**

Therefore, these are the overall parameters which decide the quality of the service being offered by Airtel. Looking from outside, customer service and responsiveness and proper signal and

data may only seem as the carriers of quality for this company, but in reality, all of these aspects have an impact on the service quality.

Implementation of Six Sigma Model

Airtel won the first prize for Six Sigma implementation in Transport Network to enhance voice quality in its network. The Six Sigma Project implemented by the company has helped the company increase their voice minutes usage to 700-800 million minutes translating to an increase in revenue of Rs. 200 crores, while the mechanism provided by the Six Sigma implementation increased the customer satisfaction index from 61% to 82%.

Actual Service Quality Results

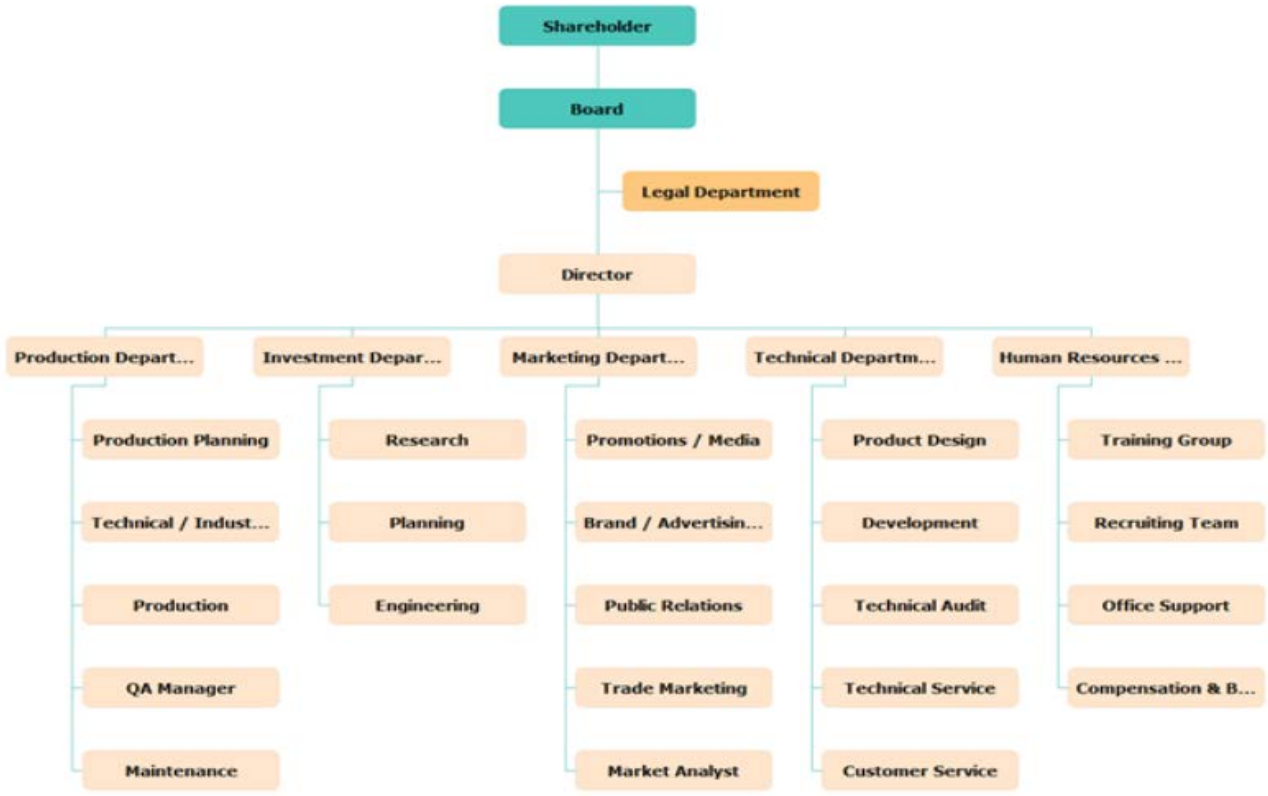
According to a research carried out to know the quality of service of Airtel in Tamil Nadu, the findings are as follows:

The data analysis revealed that large number of the respondents is satisfied with the service provided by Airtel operators but, up-to-date equipment has a highest negative value of -1.1, which shows that the customers are highly dissatisfied with availability of updated equipment. All the variables in tangibility dimensions are in the negative region which represents customer dissatisfaction intangibility aspect of service. Dependability has a highest negative value of -0.8, which shows that the customer is highly dissatisfied with the dependability aspect of reliability dimensions. All the values are in the negative region represent customer dissatisfaction. Overall reliability gap score is also in the negative region. Prompt service has a highest negative value of -0.88333, which shows that customers are highly dissatisfied with promptness in service delivery. Responsiveness gap score is at -0.65417, infers that the customer service response is not satisfactory

Comparative Analysis of Quality in Manufacturing viz a viz Service Organizations

Overview of Organization quality and policies in manufacturing sector

Talking on a wider scope, if talk try to generalise the organization chart of companies from the manufacturing sector, i.e., an organization chart that can be generalised for each company, we come to the following chart.



One key point that can be seen here is that the Quality department is a sub department under the Production department of a Plant. This is something which was not there in the tyre industry, where an analysis was done for CEAT. This means that there are certain companies that weighs more focus on the quality side, to be more precise it can be said that their products need more superior conformance on the specifications. They can undercome a huge loss if their products do not meet the standards at the first go. Hence, Quality policies are very strict and the department is not under production, but works with production department parallelly. For many other small-scale manufacturing companies, such high precision is not required and they do not have the obligation to invest so much heavily in Quality, hence they put it under the production team itself.

Mostly, in each of the companies, site wise quality management systems are maintained and the manager reports to the plant head.

Now, that was with regards to where the quality department is placed structure wise and what is the importance of it as well as the main focus of the same in manufacturing companies.

Now talking about the how the quality is maintained in manufacturing organizations and what all steps are taken to ensure that the defects can be prevented or be solved diligently, various Quality management systems are deployed across all the sites in different companies as seen above. Most of it are related to technology wise deployment and is controlled and monitored by computer or robot, especially in multinational large manufacturing companies. Systems such as Hazard control, defect control, six sigma, special teams for quality management, quality assurance procedures and most importantly internal and external audits, etc are some of the process used for the same.

Now audits are a part of each and every company. Apart from that, which all technology or other employee intensive techniques are used is dependent on the company and their revenue and the importance of overall quality management in their product portfolio. Accordingly, one or more of the above-mentioned principles can be used.

Overview of Organization quality and management systems in service sector

In comparison with the manufacturing companies, the meaning of quality for these companies take a different aspect, as the offered services are intangible and thus cannot be verified physically.

Quality in Service Sector

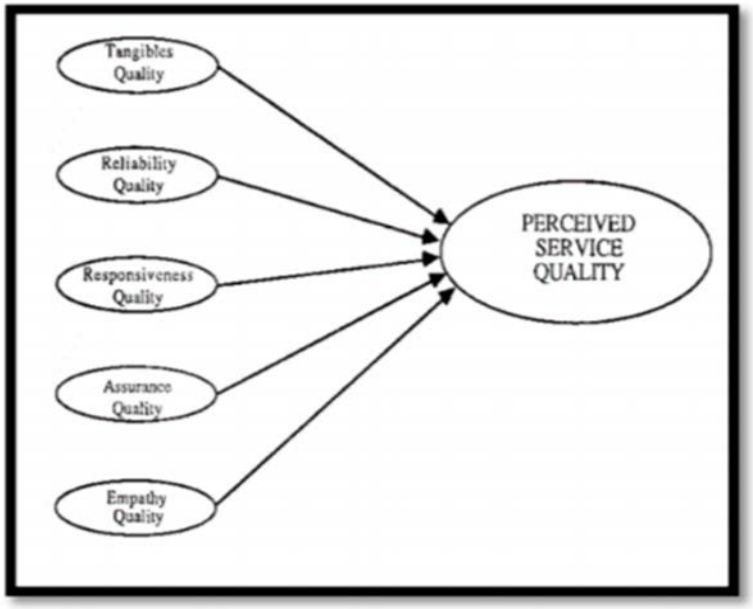
Service quality or customer perception about service quality is a critical factor which determines the competitiveness of a firm. Quality is a mental perception of customers based on various performances attributes of a service. It can be measured as the degree of alignment between customer expectation about quality and their current perception about the service quality received from the firm.

The difference between expected service quality and actually perceived (delivered) quality is an indication of customer satisfaction towards that service. Parasuraman et al. (1985) have identified ten determinants of service quality, such as:

1. Access to services
2. Communication between consumers and company
3. Competence among themselves
4. Courtesy to handle issues
5. Credibility in their services
6. Reliability in their services
7. Responsiveness in error handling
8. Point of view of security
9. The tangibles
10. Knowing and understanding the customers

For each of these determinants, the perception of the customers and the expectations are found, and then the resulting gap between both the parameters ins analysed. It is the one that will lead to an estimation of customer's perception of quality in service organizations.

SERVICE QUALITY MEASUREMENT



Also, it is seen that in services company, the employees are the ones that actually deliver the service, except in few cases where the service offered is through the use of technological deployment. Therefore, in these cases, taking the example of Sodexo, it is extremely important to take care of the employees at all levels as well as impart proper training to them as they will be the face of the company while dealing with the customers, unlike manufacturing companies, where the employees mostly work on machines that deliver the final products.

Quality for Manufacturing vs. Service Organizations:

Manufacturing	Service
Sticking to Specifications	Factors are more intangible
Aspect of Performance	Aspect of Consistency
Aspect of Reliability	Fast Responsiveness to issues
Product features	Friendliness and courtesy
The Durability of the product	The Promptness in service
Product Service	Atmosphere of the service setup

As the parameters in the table are self-explanatory, in manufacturing companies, the goods or products that are produced are of pre-determined specifications, which the machines handle. Whereas in the case of services, it is something that requires constant customization and the employee side responsiveness has to be quick because of the competition out there because that directly affects the service quality and customer satisfaction.

TQM Practices in Manufacturing Companies	TQM Practices in Service Companies
Product/ Technology Focus	Human Focus
Emphasis is on technical skills	Emphasis is on interpersonal and communication skills
Statistical process control is present	Statistical process control is inappropriate
Elimination of product defects	Check customer defections
Quality measurement by statistical tools and techniques	Quality measurement through customer satisfaction
Quality defects can be visually seen	Visual evidence of service defect is not possible

Learnings and Conclusion

The report was very helpful in understanding the meaning of quality management, quality standards and quality principles of an organization. Also, as two different sectors were taken for study purposes, manufacturing and service, and under them also, companies producing different goods and services were taken, it helped in making me understand the different principles that are being followed and the different department setup for maintaining the same.

Also, now real-life differences, apart from the theoretical aspects covered in the research paper is also known. For example,

A defect in quality for a manufacturing company like General Electric might result into a particular product or part of the product being removed from the setup line and not being sent out as a finished product. But in the case of services company, a quality or process error might actually turn out to be more costly, say for example talking about banks or investment banking companies such as JPMC (as they have adopted six sigma). The error in their service can be magnified till a large extent because it is more of a transaction based financial service provider.

Firstly, it is understood that in the service sector, the managers must realize that it is not the case as in the manufacturing sector, as there are a large number of processes and steps in the banking and other service companies, such as financial services companies, that are of different levels of varying complexity and that require totally different levels of individualization and customization.

Like in case of manufacturing companies, there can be cases where the steps and manufacturing can be at any level of standardization. But that is not the case in services companies. Hence, it becomes a challenge for the service companies to decide which all processes can be mass-customized; so that they can apply a common quality framework for all of these and in all conditions for all the customers in order to achieve service excellence.

The second learning from the research project can be considered as to how the meaning of defects are different in service organizations from manufacturing organizations. **To know what is the meaning of a defect and how it can be measured**? In manufacturing industries, it is often easier to spot defects visually as they relate to the quality of the product manufactured.

However, in service companies, defining a defect is a challenge as the conflict between quality as demanded by the customer and the quality of the service as offered by the service provider are two different things. Owing to the perceptual nature of arriving at an understanding of what a defect is, it is often helpful to define the defects in terms of customers lost, customer satisfaction ratings and service turnaround times.

The conclusion deduced from all of these can be considered same as the learnings.

Primarily, the organization quality is different in organizations among both the sectors. Also, the meaning of defect changes across both the sectors and therefore different quality management systems are deployed among them to act accordingly and produce goods and services of the highest standard. Direct customer satisfaction is the primary quality objective in service organizations. Different means are deployed to achieve it, and is not restricted to just the use of technology to cross check the specifications for production, as is the case in manufacturing companies.

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