GE 2022 TOTAL QUALITY MANAGEMENT

UNIT I

Introduction – Need for Quality – Evolution of quality- Definition of quality – Dimensions of manufacturing and service quality – Basic concepts of TQM – Definition of TQM – TQM Frame work – Contribution of Deming, Juran and Crosby – Barriers to TQM

INTRODUCTION TO QUALITY

One of the important issues that business has focused on in the last two decades is “quality”. The other issues are cost and delivery. Quality has been widely considered as a key element for success in business in the present competitive market. Quality refers to meeting the needs and expectations of customers. It is important to understand that quality is about more than a product simply working properly.

Quality refers to certain standards and the ways and means by which those standards are achieved, maintained and improved. Quality is not just confined to products and services. It is a homogeneous element of any aspect of doing things with high degree of perfection. For example Business success depends on the quality decision making.

EVOLUTION OF QUALITY

Time	Events
Until 1960s	
Prior to the 20th century	Quality is an art Demands overcome potential production An era of workmanship
F.Taylor 1900s	The scientific approach to management resulting in rationalization of work and its break down leads to greater need for standardization, inspection and supervision
Shewart 1930s	Statistical beginnings and study of quality control. In parallel, studies by R A Fisher on experimental design; the beginning of control charts at western Electric in USA
Late 1930s	Quality standards and approaches are introduced in France and Japan. Beginning of SQC, reliability and maintenance engineering
1942	Seminal work by Deming at the ministry of war in USA on quality control and sampling Working group setup by Juran and Dodge on SQC in US army Concepts of acceptance sampling devised
1944	Daodge and Deming carried out seminal research on acceptance sampling
1945	Founding of the Japan standard association
1946	Founding of the ASQC
1950	Visit of Deming in Japan at the invitation of K Ishikawa
1951	Quality assurance increasingly accepted
1954	TQC in Japan ; Book published 1956

1957	Founding of European organization for the control of quality
After 1960s	
1961	The Martin Co in USA introduces the zero defects approach while developing and producing Pershing Missiles. Quality motivation is starting in the US and integrated programmes begun
1962	Quality circles are started in Japan
1964	Ishikawa publishes book on Quality management
1970	Iskiawa publishes the book on the basics of quality circles and the concept of Total Quality is affirmed and devised in Japanese industries
1970 to 1980	Just – in –Time and quality become crucial for competitiveness. A large number of US and European corporations are beginning to appreciate the advance of Japan's industries. Taguchi popularizes the use of environmental design to design robust systems and products
1980+	Facing the rising sun challenge in quality management Development and introduction of FMSs and greater dependence on supplier contracts. Growth of economic based on quality control, information software packages
1990+	The management of quality has become a necessity that is recognized at all levels of management Increasing importance is given to off line quality management for the design of robust manufacturing processes and products. The growth of process optimization

QUALITY – DEFINITION

1. Predictable degree of uniformity and dependability at low cost and suited to the market -Deming
2. Fitness for use-Juran
3. Conformance to requirements - Crosby
4. Minimum loss imparted by a product to society from the time the product is shipped - Taguchi
5. A way of managing tile organization -Feigenbaum
6. Correcting and preventing loss, not living with loss - Hosffin .
7. The totality of characteristics of an entity that bear on its ability to satisfy stated and implied needs – ISO

QUANITIFICATION OF QUALITY

$$Q = \frac{P}{E}$$

P = Performance E = Expectations

DIMENSION OF QUALITY

1. Performance	2. Features	3. Conformance
4. Reliability	5. Durability	6. Service
7. Response	8. Aesthetics	9. Reputation

TOTAL QUALITY MANAGEMENT

Total - M*ade up of the whole*
Quality- D*egree of excellence a product or service provides*
Management- Act, A*rt or manner of handling, controlling, directing, etc...*

Why TQM:

1. A question of survival in the intense competitive environment
2. Increasing customer consciousness

DEFINITION:

1. TQM is the management approach of an organization, centered on quality, based on me participation of all its members and aiming at long-term success through customer satisfaction. and benefits to all members of me organization and to society.- **ISO**

2. TQM is an integrated organizational approach in delighting customers (both internal and external) by meeting their expectations on a continuous basis through every one involved with the organization working on continuous improvement in all products, services, and processes along with proper problem solving methodology - **INDIAN STATISTICAL INSTITUTE (ISI)**

3. TQM is a. people - focused management system that aims at continual increase in customer satisfaction at continually lower cost. TQM is a total system approach (not a separate area of program), and an integral part of high level strategy. It works horizontally across functions and departments, involving all employees, top to bottom, and exceeds backwards and forward to include the supply chain and the customer chain – **TOTAL QUALITY FORUM OF USA**

CHARACTERISTICS

1. Customer Oriented
2. Long term commitment for continuous improvement of all process
3. Team work
4. Continuous involvement of top management
5. Continuous improving at all levels and all areas of responsibility

BASIC CONCEPTS OF TQM:

1. Top management commitment
2. Focus on the customer – Both internal and external
3. Effective involvement and utilization of entire work force
4. Continuous improvement
5. Treating suppliers as partners
6. Establishing performance measures for the processes

PRINCIPLES OF TQM:

1. Customers requirements - (both internal & external) must be met first time & every time
2. Everybody must be involved
3. Regular two way communication must be promoted I
4. Identify the training needs and supply it to the employees
5. Top management commitment is must
6. Every job must add value
7. Eliminate waste & reduce total cost
8. Promote creativity
9. Focus on team work.

TQM FRAME WORK

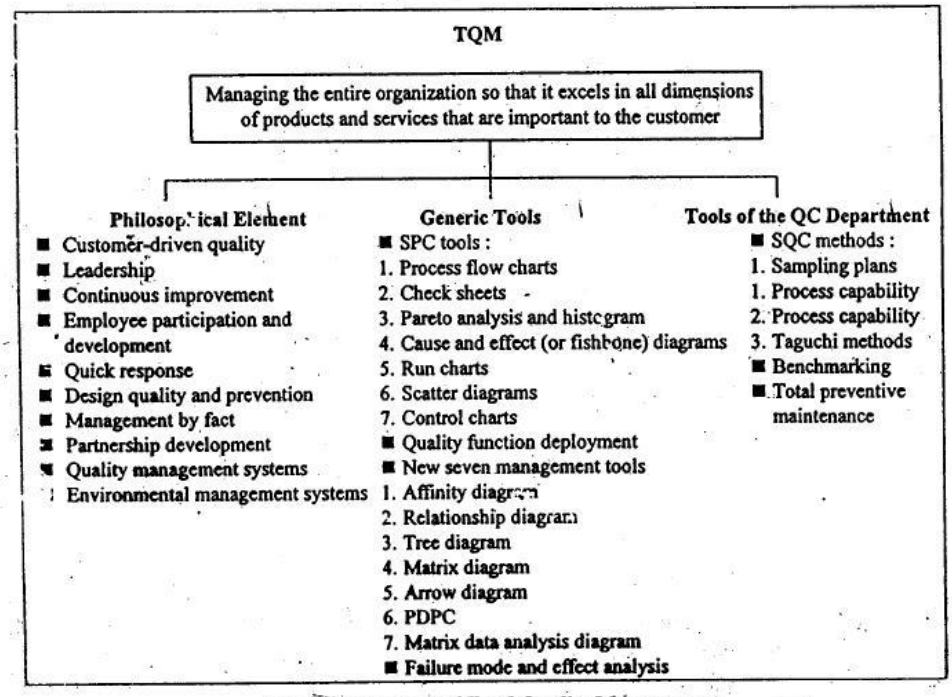
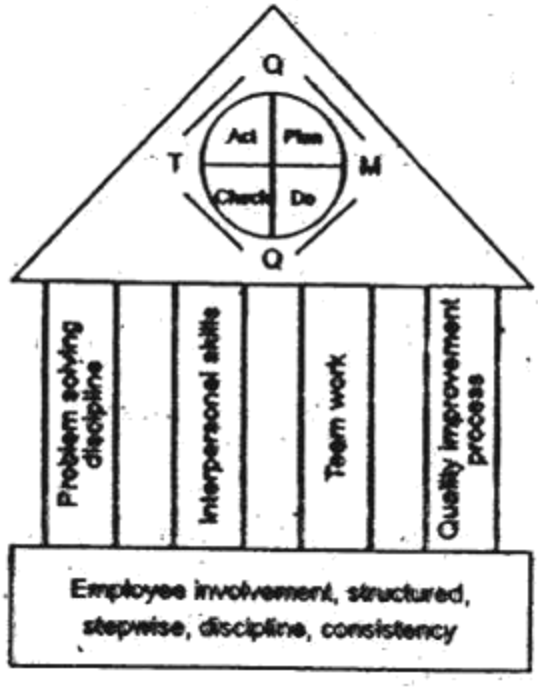


Fig. Elements of Total Quality Management

BARRIERS TO TQM



IMPLEMENTATION

1. Lack of management commitment
2. Lack of faith in and support to TQM activities among management personnel
3. Failure to appreciate TQM as a cultural revolution. In other words, inability to change organizational culture
4. Misunderstanding about the concept of TQM
5. Improper planning
6. Lack of employees commitment
7. Lack of effective communication
8. Lack of continuous training and education
9. Lack of interest or incompetence of leaders
10. Ineffective measurement techniques and lack of access to data and results
11. Non-application of proper tools and techniques
12. Inadequate use of empowerment and team work

BENEFITS OF TQM

Tangible Benefits	Intangible Benefits
• Improved product quality • Improved productivity • Reduced quality costs • Increased market and customers • Increased profitability • Reduced employee grievances	• Improved employee participation • Improved team work • Improved working relationships • Improved customer satisfaction • Improved communication • Enhancement of job interest • Enhanced problem solving capacity • Better company image