

BENCHMARKING

Defination

Benchmarking is a systematic method by the best organization practice. Benchmarking involves the search for best practices that will lead to superior performance or "Measuring one's performance against that of the best-in-class organizations, finding out how the best-in-class achieve those performance levels and using these as basis for organization's targets, strategies and implementation.

→ Types of Benchmarking

There are three major types of benchmarking:

1. Performance or operational benchmarking
2. Process or functional benchmarking
3. Strategic benchmarking.

1. Performance or operational benchmarking

Performance benchmarking involves pricing, technical quality, features and other quality or performance of products or services. Performance benchmarking is usually performed by direct comparisons or "reverse engineering" in which the competitor's products are taken and analysed. This process is known as operational benchmarking or competitive benchmarking.

2. Process benchmarking

This benchmarking centers work on processes such as billing, order entry, employing training etc.

Process benchmarking has several advantages compared with competitive benchmarking. It is much easier to get organization to share information.

3. Strategic benchmarking

This type is used when an industry wants to evaluate its position for world-class performance. Hence, companies move out of their industry and do benchmarking.

→ Process of benchmarking

1. Decide what to benchmark : Firstly it is necessary to decide the critical success factors that will help the company to gain advantage. A Pareto analysis will be very helpful to identify the critical success factors.
2. Understand current performance : The second step is to understand the current process. The following points will be help to complete the second step.
 - Document the current process
 - Attention must be paid to inputs and outputs.
 - Questioning must be done in a proper way.
 - Quantify the documented process using the metrics - unit costs, asset measures, quality measures, etc.
 - According details must be thoroughly studied to understand what is included and what is not in the accounting system.

3. **Plan** : A proper benchmarking team must be formed. This team will decide on the method of collecting the data. The team must also identify the organizations that are to be benchmarked and the type of benchmarking to be followed.
4. **Study others** : The fourth step is to study other organizations. While studying data must be collected from both internal and external sources. Site visits, questionnaires and focus groups can be used to collect data.
5. **Learn from data** : In this step the team will be able to answer the following questions.
 - Is there any gap between the organization's performance and the performance of the best in class?
 - What is the gap? How much is it?
 - Why is there a gap? What does the best in class do differently that is better?
 - What would be the resulting improvement if the same is adopted at our side?
6. **Use the findings** : The last step is to use the findings. If the findings are not implemented then the whole exercise will be just a waste of time. Hence, it very essential to adopt the change, when a negative gap occurs during the benchmarking process. While implementing the change both operators or process owners and top management must agree for the change.

→ Approaches to Benchmarking

AT & T's 12 step process	Xero's 10 step process
<ul style="list-style-type: none"> • Determine who the clients are who will use the information to improve their process. • Advance the clients from literacy stage to champion stage. • Test the environment • Determine urgency. Panic or disinterest indicates little chance for success • Determine scope and type of benchmarking needed. • Select and prepare the team. • Overlay the benchmarking process onto business planning process. • Develop the benchmarking plan. • Analyse the data • Integrate the recommended action • Take action • Continue improvement 	<ul style="list-style-type: none"> • Identify what is to be benchmarked • Identify comparative organizations. • Determine data collection method and collect data • Determine current performance gaps. • Project future performance level. • Communicate benchmarking findings and gain acceptance • Establish functional goals. • Develop action plans. • Implement specific actions and monitor progress. • Recalibrate benchmarks.

→ Advantages of Benchmarking

1. Promotes a thorough understanding of the organization's own processes i.e., Organisations strength and weaknesses with those of other organizations.
2. Involves the adaptation of the practices of better-in-class competitors, rather than invention, resulting in saving in time and money to the organization.
3. May lead to identification of non-value-added activities and plans in the existing process.
4. Enables comparison of performance measures in different dimensions.
5. Focuses on performance measures and processes and not on products.
6. Allows organizations to define specific gap b/n what they help in employees observing gap b/n what their performance level and what best-in-class.

→ Disadvantages

1. Best-in-class target is not a static target but a moving target.
2. Benchmarking is not a solution for all poor performances of the organizations.
3. It is not a strategy.
4. Not a business philosophy.

→ Levels of Benchmarking.

1. Internal Benchmarking
2. Competitive Benchmarking
3. Non-competitive Benchmarking
4. World-class Benchmarking.

Internal Benchmarking is carried out within an organization or with another sister organization. Internal Benchmarking is easiest to carry out since data and information are readily available and confidentiality factor is minimized.

Competitive benchmarking involves the analysis of performance and practices of best-in-class of organizations. The performance of these best in-class organization will be the benchmark which the organization can compare with its own performance and adopt the practices.

However benchmarking the competition could be difficult since it may be difficult or impossible to get the competitor's secrets.

Non-competitive benchmarking: In this level of benchmarking it is learning something about a process to improve the organisation. This includes

1. A related process in the organization with another organization with which the benchmarking organization does not directly compete with.
2. A related process in a different organization.
3. An unrelated process in a different organization.

World-class benchmarking: This is a highly, an ambitious level of benchmarking of an organization. It involves looking towards the recognized leader for the process being benchmarked, an organization that performs better than any other organization.

→ Quality function Deployment (QFD)

Quality function deployment is a systematic approach to product design, engineering and production and provides in-depth evaluation of a product. By properly implementing QFD an organization can improve engineering knowledge, productivity and quality and reduce cost, product development time and engineering changes.

→ The process of QFD:

1. Product planning (House of quality) - Customer requirements are translated to technical characteristics. The requirements of the customer (voice of the customer) are transferred to the properties & characteristics of the product.
2. Product design (Parts Deployment) - Part and components are determined and their properties and specifications are set. The design concept is chosen that best fulfils the given target values in the house of quality. Parts and components that will be critical for the product are identified and then the part properties are set.
3. Process design (Process planning) - Methods for process control and process improvement are decided.
4. Production Design (Production planning). - Production instructions for manufacturing operations of previous

phase are designed.

→ Benefits of QFD:

a) Improves customer satisfaction

Quality function deployment looks past the usual customer response and the requirements in a set of basic needs, which are compared to all competitive information.

b) Shorter Development cycles

QFD is a system for placing development efforts at the front of a program rather than at the end. With development up-front, the team can focus on planning and problem prevention.

c) Promotes team work

QFD involves contribution from everyone. Hence, the whole organization should work together to obtain a product as per the needs of the customer.

d) Lower costs, Greater Productivity

In effort to maintain quality, top manufacturing companies commonly specify many internal requirements and assign each high importance. Since, there are fewer engineering changes, considerably reduced start-up costs, and reduced chance of oversights during the design process the total cost comes down and the productivity improves.

e) Provides Documentation

This is an orderly way or systematic approach of obtaining information and presenting the same. Hence, this requires a proper documentation to meet customer needs.

→ House of Quality

House of quality is the primary tool used in QFD. This is a structured framework resembling a house. Hence, the name House of quality. The HOQ consists of exterior walls, interior walls, ceiling, roof of the house, and the foundation of the house.

Left exterior walls signify the customer requirements or voice of the customer. Inputs form, affinity diagram are portrayed in this portion of the house.

Right side wall gives prioritised customer requirements. The inputs from left side wall are taken and preferences are highlighted on this side of the house. Pareto chart will help to prepare the preferences. A scale can be used to prioritize the needs.

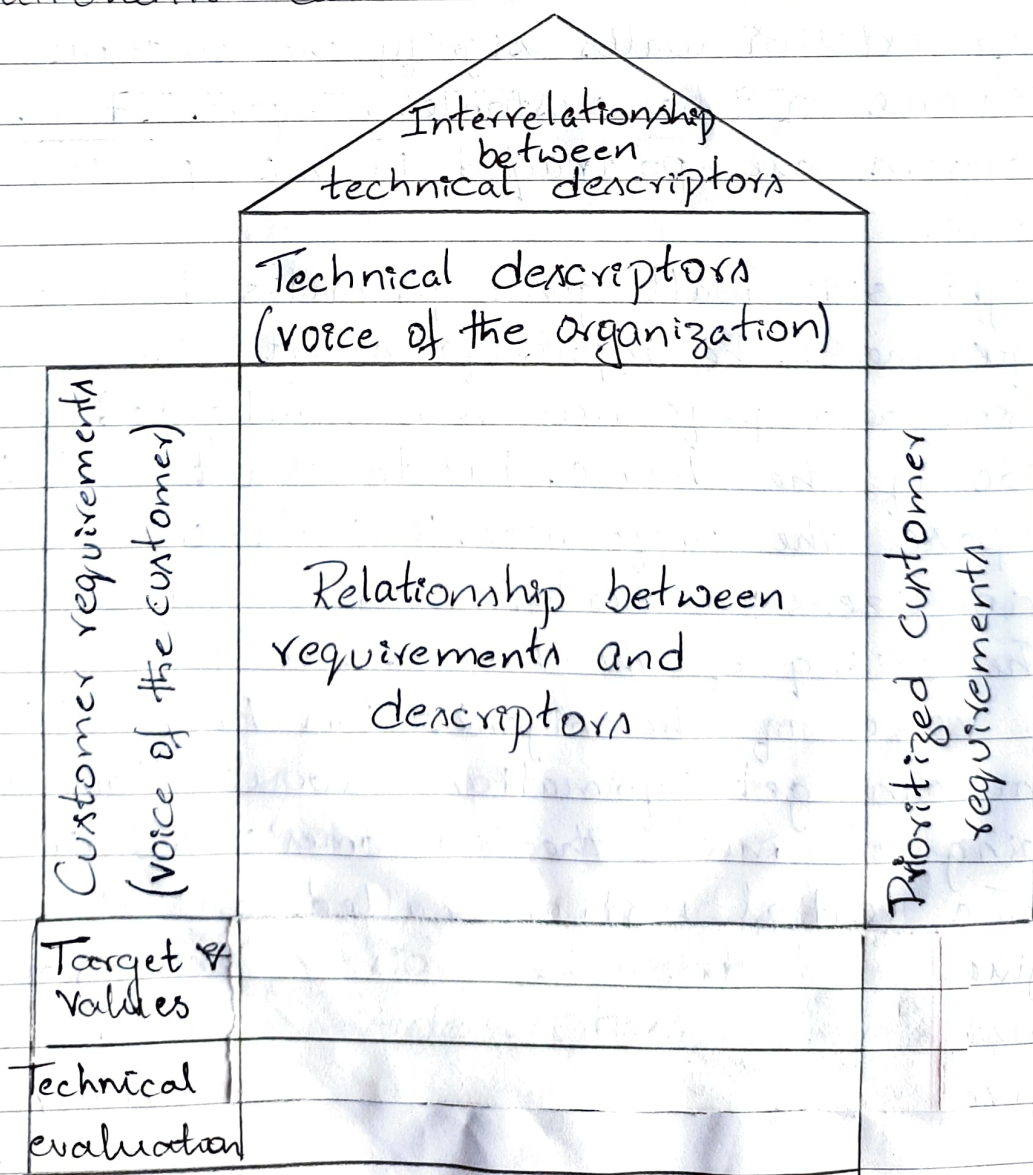
The ceiling of the house has technical descriptors or voice of the organization. From this portion one can get information about How are we going to meet the customer's requirements.

The central portion, called as interior walls gives the interrelationship between voice of customers and voice of organization. This portion gives relationship between what and How.

Normally three categories of degree of relationship are used, viz. Strong, Medium and Weak.

The roof of the house is a correlation matrix between How's. Here symbols can be used to show significance on each other. Normally strong positive, positive, negative, and strong negative are used.

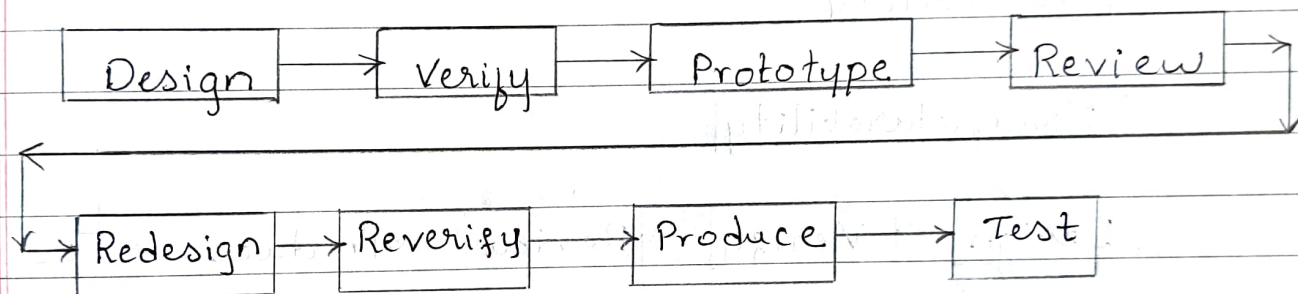
Finally the foundation of the house gives details about degree of technical difficulty, prioritised technical descriptions, and degree of difficulty in meeting customer's needs. This portion of the house explains How much of requirements can be met.



→ Quality by Design:

Quality by Design is also known as concurrent engineering, simultaneous engineering or Parallel engineering. In this technique, many stages of product development are handled simultaneously rather sequentially. This concept helps to reduce the product lead time and reduces production cost.

→ Sequential Engineering:



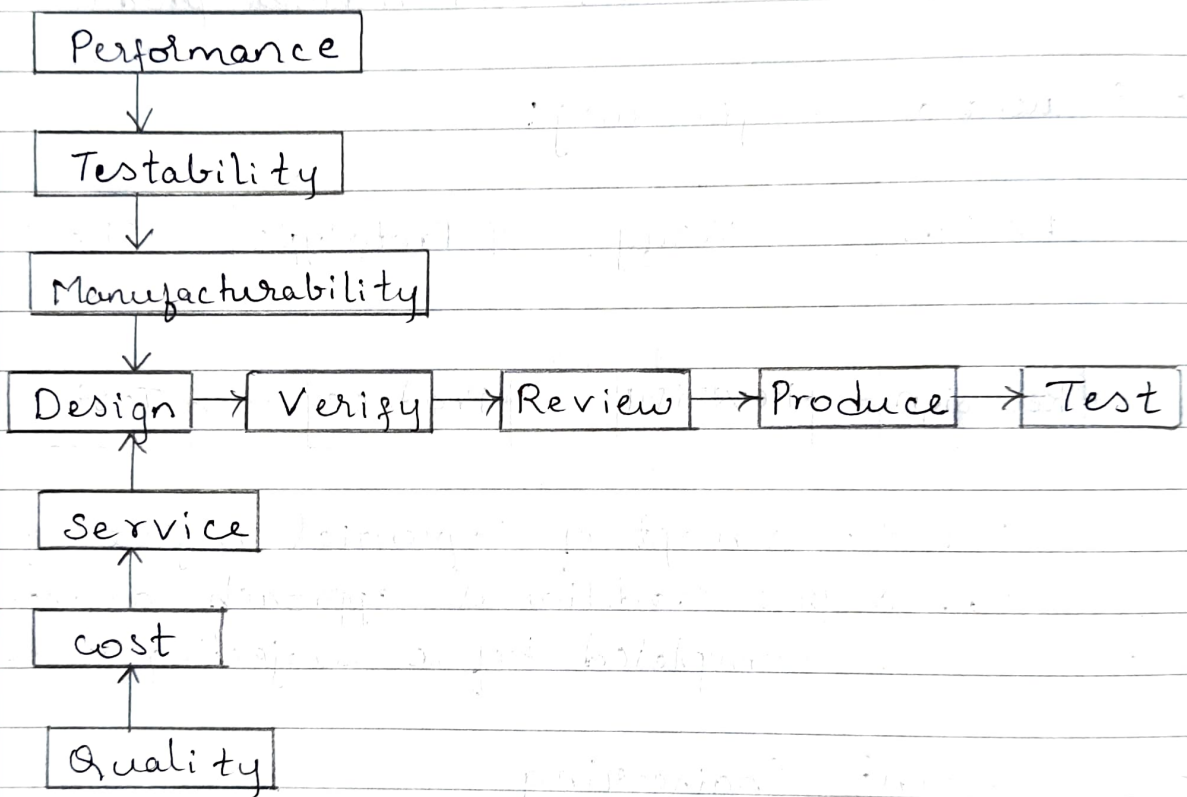
Earlier the concept of sequential engineering was followed. In this traditional approach all manufacturing stages were completed before subjecting it to test.

→ Concurrent Engineering

However in concurrent Engineering as the name itself suggests, different stages of product development are handled at the same time than in a sequential manner.

In this technique, a product is designed for its performance, manufacturing, testability, service cost, quality, aesthetics, assemblability, marketability and reliability. In addition to these factors even factors like customer requirements, supplier

requirements, and management issues are discussed and solved before a prototype is produced. Hence, the failure of the final product is less likely to happen. Hence, the time to market and production lead time are shortened, yields customer satisfaction and reduced cost of production.



Total Productive Maintenance

Eight pillars of TPM are displayed in the following picture. TPM is achieved with the help of 5S seiri (sort), seiton (set in order), seiso (shine), seiketsu (standardise), and shitsuke (sustain). 5S make the foundation for a TPM program.

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- **Focused Improvement** : Small focus work groups improve the quality continuously by removing root causes of errors. They work together to reduce the number of defects.
 - **Autonomous maintenance** : Autonomous maintenance makes workers responsible for maintenance of machines they work with. This eliminates the need for an expert and also develops a sense of ownership among workers.
 - **Planned maintenance** : In planned maintenance proactive methods are followed to avoid breakdown than fire fighting. This significantly reduces the work stoppages and unnecessary inventory build up.
 - **Training and education** : Everyone are trained and educated to make them understand the benefits of TPM.
 - **Early Management** : The entire TPM program is planned early and executed in time to avoid confusion and doubt.
 - **Quality Maintenance** : It is achieved by providing a defect free production process. Statistical tools are used to identify and eliminate or minimize root cause of the problem.

- Office kaizen: Bottlenecks in the administration will delay the entire implementation process. Hence, to achieve TPM, proper administration is necessary. They focus on office automation that will help in data management.
- Safety, Health and Environment: Safety health and environment will zero accidents in every department due to fire or chemicals or equipment or any reason and ensures zero health damage to workers.

