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DESIGN AND ANALYSIS OF PRODUCTION UNIT

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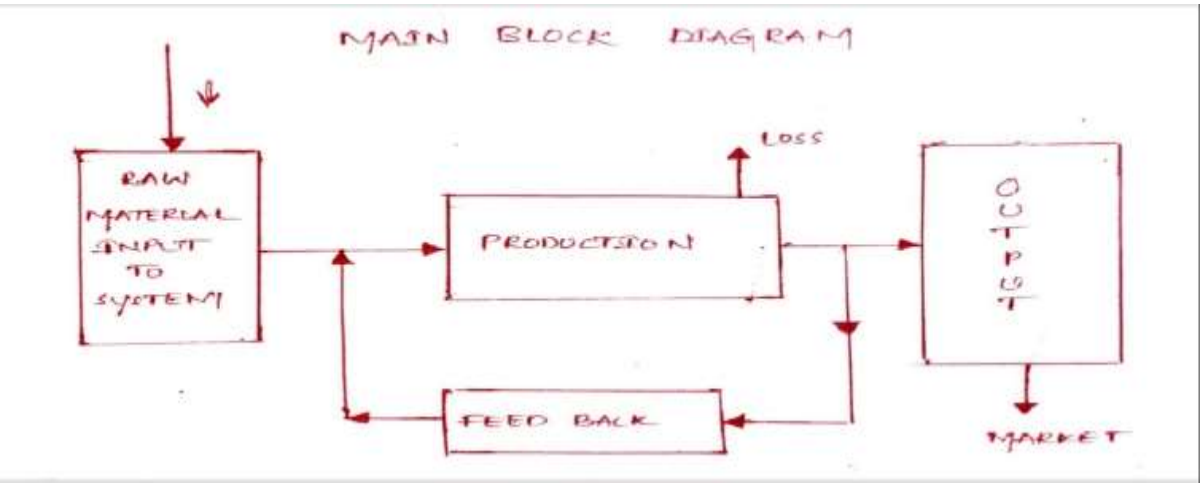
ABSTRACT: In this developing generation the usability of the products are increasing more than the amount of products produced by the industries, in order to maintain the demand to the supply for the goods which are required for the consumers are becoming very difficult due to the faster usage for the slower production of the components, each and every consumers are bothering about the time, now a days time plays a crucial role for the betterment of the life to some work, so every people are showing intrest to the products which are produced to fulfill their needs rather than to produce by them self they are depending on the industries this making a big pressure on the industries to produce more and more amount of goods by working extra hours by paying large amount to the limited workers which they have, in order to reduce the stress on the industries I made a clear procedure to increase the production by eliminating the waste time , unwanted needs , and we are identifying the best methods of production to be followed for more production as well as to get a clear idea about the processes undergoing to finish the product

1. INTRODUCTION

Production the terms refers to the formation of raw material to the finished goods, where many industries are working for satisfying the needs of the customers as well as to supply the goods from one place to another place where every place doesn't possesses every product, so these industries are full filling this criteria

Production of goods is not so easy it takes lot of process to finish a product from initial stage to final stage where while undergoing this processes some of the industries may produce each and every sub components in their company and some of the industries order it from some small factories and some other factors are included to finish the process to make a product, production plays a vital role in the modern society, as the products are differ from one industry to other with some different parameter , each and every industry prefers main concern on the practical needs of the consumer where the demand of the product goes higher level.

2. MAIN PRODUCTION CYCLE



3. DISCRIPTION OF PRODUCTION UNIT

PRODUCTION states that raw material turns to a finished product where it differs from process to process, as the products are classified into different groups the process of producing those products are also classified into different processes,

Types of production are :

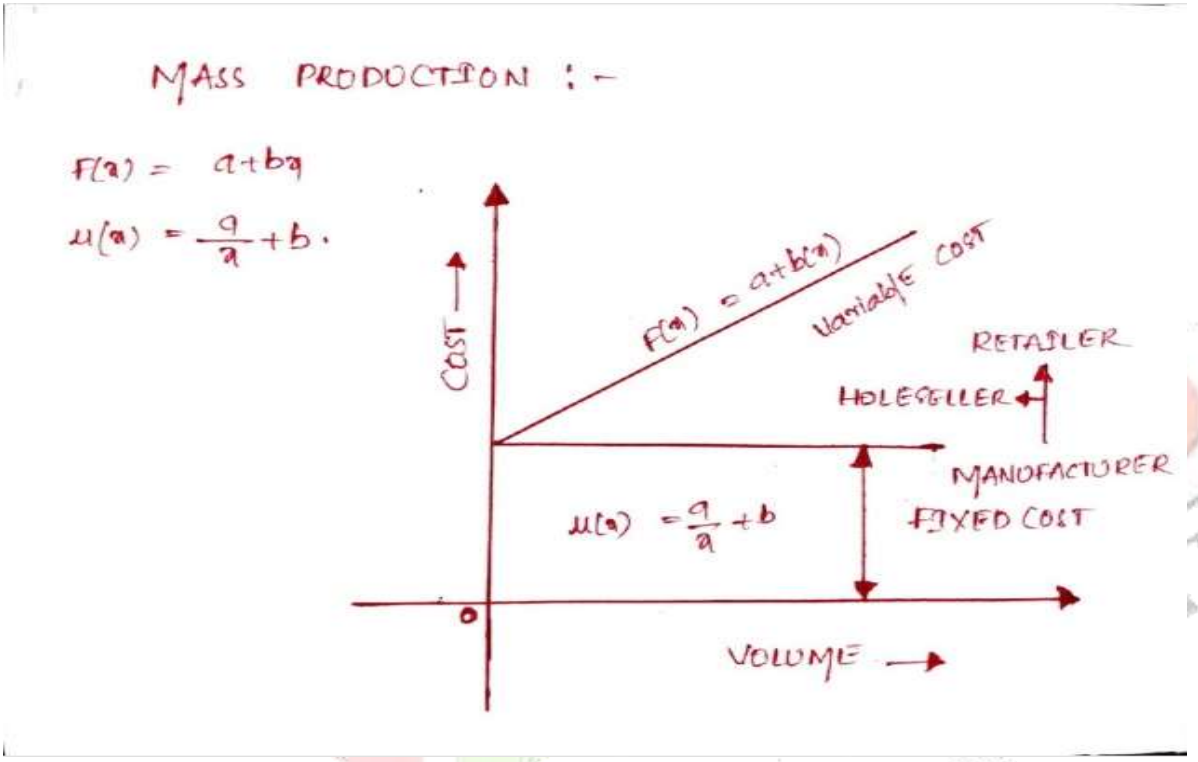
Unit production

Batch production

Mass production

These are the three major classification of the production processes which are followed by the industries majorly there were mass production industries are high compared to other type of productions. As we all know that the production starts from the raw material and ends by the testing of the final product

4. MASS PRODUCTION CURVE



For the production of a complete component there are many parts to be fixed together to bring it to the market.

First, we all need to the clear procedure of how a production of a component starts :

NEED OF MARKET;

Market is nothing but the people who are buying the product that may be hole seller or retailer or the consumers the company should make a survey among them about the needs of the product

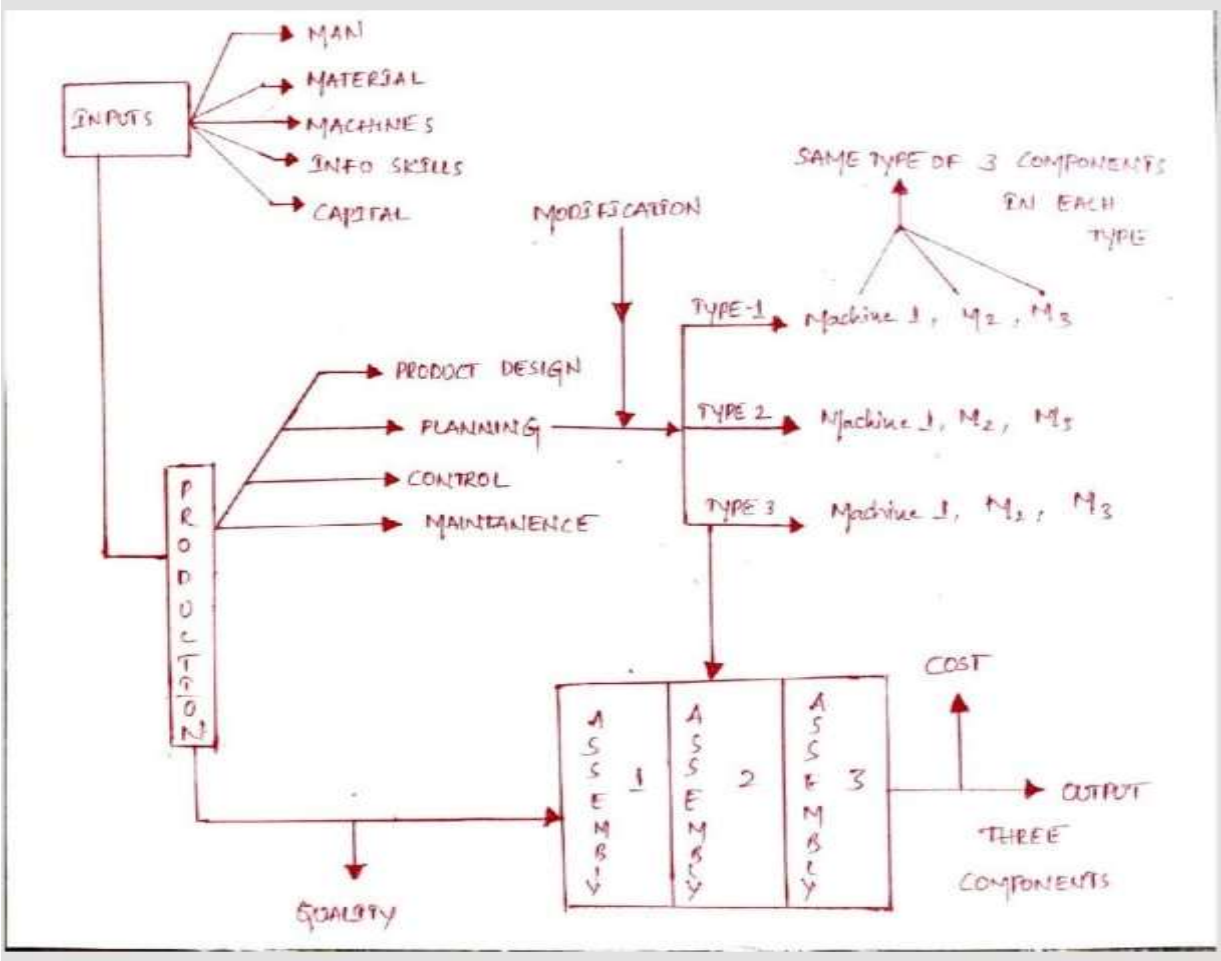
As the company starts a survey or a research by their team in order to know the need so the people where they want ot produce the goods so as they get a clear idea of how and what questions to built the product for the consumers

Then the company engineers make a decission by undergoing all the specifications which are made by the consumers and they make a clear identity of how the product should be what are the charecters that the produced product should processes, and in which sector that product is useful what are the other small components required to fix the product and the number of sub components that the product should divide for the easy production these are all to be made a decision by the engineers of the industry.

Before the decision all the persons of the company should made a survey among then in order to find the ideas of the people working their for the better implimentation of the product and then final decision should be made after the decision, they have to make a sketch of the product for the visuvalization and then the product is sub divided for the easy production of the component.

Before starting the production process we have to make a optimum procedure to produce the product with low investment so that the company gets more profits by the product in the market

5. CLASSIFICATION OF PRODUCTION MODIFIED LINE



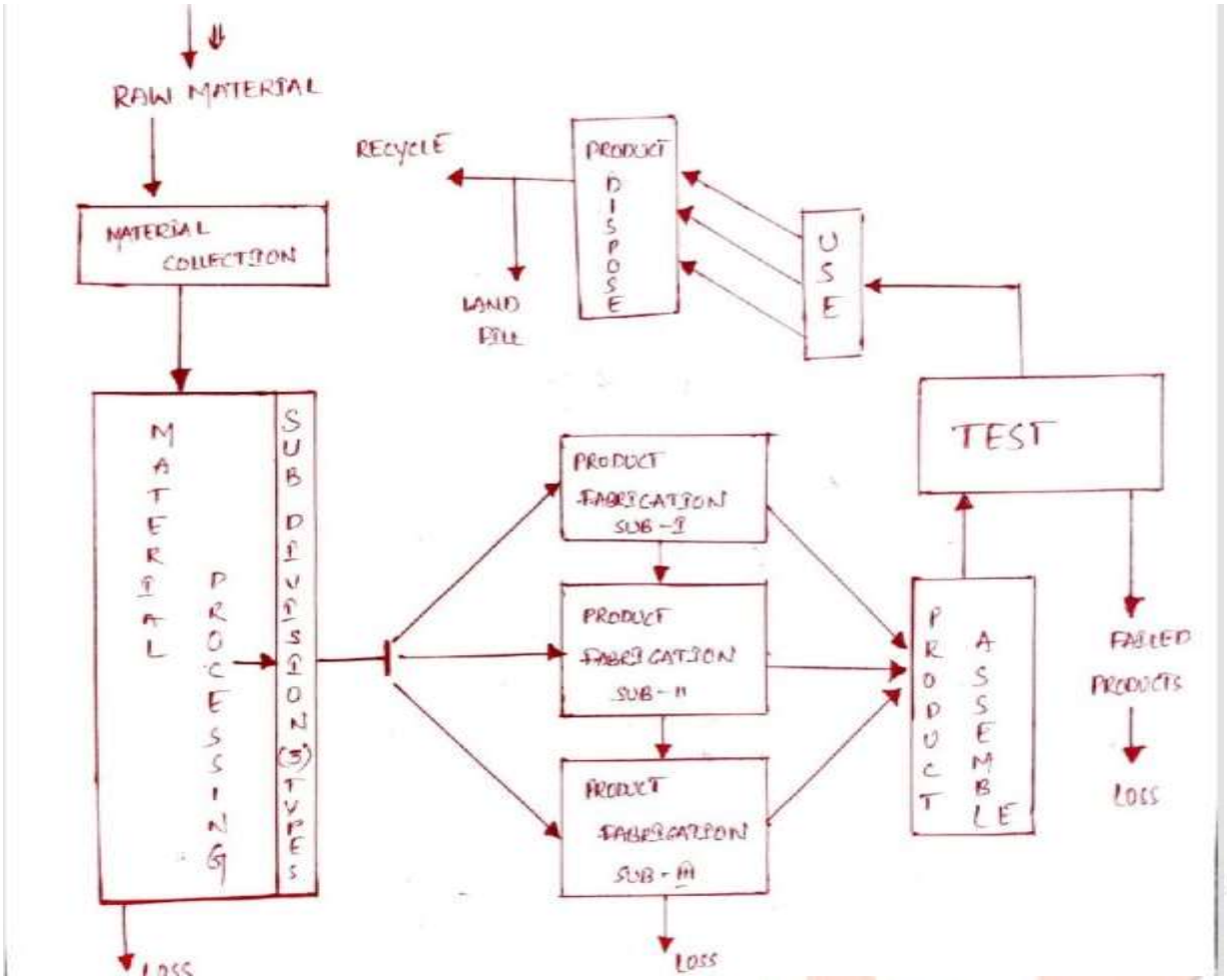
6. PRODUCTION PROCEDURE:

The followed procedure is explained step by step:

The product specifications are to known for the type of operations that are performed on the raw material to make it finish.

Divide the main component into some sub components so that each component has some special operation that was done simultaneously so that the time required for the completion of product reduces as there are many parts required to fix the component some of the smaller parts like nut and bolts, washers, some small components are purchased from the other small sectors so that it reduces the time for the preparation of those small particles and the cost of production also decreases because the machines or the components required to make those small particles are higher in order to make all those by own we are distributing the components so that the preparation of the major components are made so easily without any interruption .

MODIFIED PRODUCTION LINE DIAGRAM



As the products are reduced to be produced we are eliminating the extra time required for those components

The major problem facing by all the industries are low labours so by reducing the work load we can arrange the limitted labours to all the required works in our industry

As all the sub components are produced by undergoing some operations which are gathered together for assembling to made a component.

After the assembling of all those sub components the products is ready for testing final stage of production is testing it is done successful then the products are ready for selling in the market.

These is the optimum solution for the components to be produced by limiting the time and using the maximum limited labours

7. SOME KEY POINTS:

As we all known that there is a shortage of labour in the market for the industries so, we are reducing the amount of risk taken to the unit by purchasing small components by other factories by this the amount of labour required for the production are closely less,

We know that the type of small components are purchased from outside so that the machinery and raw material required for those small components are minimized so that the cost of production is less , we can supply the goods in the markets with best quality by the application of low cost compared to other products and we can get more demand due the low cost applications.

Before the application of this procedure there are more number of components to be manufactured by the self company so that there is work stress more to complete the products due to this the quality and the products are gradually decreased but, now buy the application of some new techniques offered to the company increase the quality of the product.

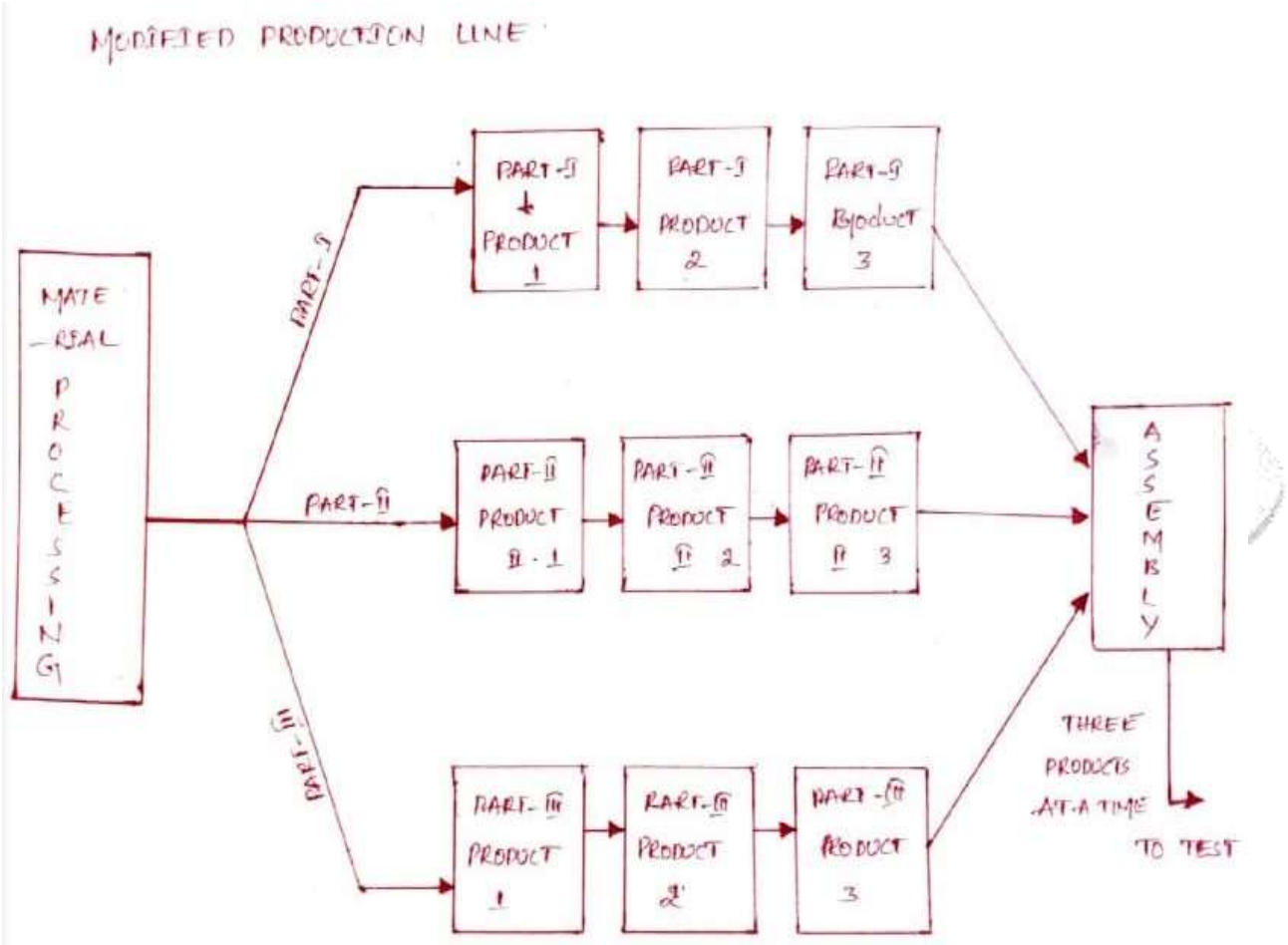
8. BRIEF EXPLANATION ABOUT THE MODIFIECATION MADEIN PRODUCTION LINE

In the above figures we absorb that the procedure has been classified into three sub catogeries where these three sub divisions are for only major components and the remaining some other basic components are purchased from other small scale industries .rather than to produce those things.

Because, the cost of machinery and daily workers and cost for material is so risky job for the large scale industries due to this we made a modification of removing small components work and to purchase it so that the time , labour, machinery,

NOTE – in mass production if any components gets repair or damaged whole unit should be shutted off by admitting this method there is no need of complete shut down for the industry remaining two machines of the three sub divisions work together for the production of goods and services.

capital required for those small components are decreased for the company, so that these people of major work concentrates on the sub divisions with out any stress on them.



In the above figure we absorbs that the main component is divided intothree main major classifications each division has a same set of three machines which work on a single type of working principle , so that these three sub divisions work on three components at a time by undergoing the modified technique as the three machine in each set prepares three sets of components in the output of the production so that in a set of unit time i.e.., in the time of single component the production has increased to three as the assembly section is also categorized as three separate assembly sections so that for a mass production unit it produces three components in the time of one production this was a major modification which has been changed .

The major advantages which are profitable by changing the production line are as follows:

We are getting good quality for the product

.we are majorly increasing the productivity of the products.

The time taken to finish the production is decreased so that the number of components produced per day increases so that it helps the industry to supply more and more amount of goods for the needs of the customer.

In this system , we can pretend that if a system gets destroyed , production work will not stop it goes on but it wont stop for other two machines of same kind.

\by assembling time gap between the three sub division machines three workers are enough to work the production area.

9. ADVANTAGES

1. Good quality
2. Increase production rate
3. Increases more amount of control
4. Over load is reduced
5. No breakdown for the repair
6. High production more supply

These are the advantages for the attachment of the modified method in production line.

10. CALCULATIONS

BEFORE MODIFICATION

Time required for one component to be produced

= time for production + time for assembly

= 20min

AFTER MODIFICATION

In the unit time of 20min the production line is producing three components by eliminating wastage of time + small manufacturing equipments

So in the time of 20minthe modified system produces three components

COST CRITERIA ANALYSIS FOR SMALL EQUIPMENTS

Before modification self industry has to prepare

Cost of raw material = 10 rupees for preparation of 5 units

Cost of labour for preparing 5 units = 5 rupees

Total cost = material cost + labour cost + allowances = 17 rupees

By the modification

It means we are purchasing the equipments from small scale sectors

Cost for 5 units = 14 rupees (we order the amount of components in bulk)

Due to this we can reduce the cost of production as well as we can increase the production by three times.

11. RESULT

As we figured about the modified system of production line , in the modified line there are many advantages which are precious for the development of the company name and faith in the market, this method helps to produce more amount of goods in the less time, it helps to increase the supply for the rate of demand , it decreases the cost for the manufacturing of small equipments which are purchased in modified system, the major and the key advantage of this system is there is no posibility of breakdown of the production line if and any components gets damage.

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