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Persuasive Metamorphosis of Manufacturing Overhead at The Golden Doors of Disparaging Uttermost Cost of Goods

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Keywords

Factory overhead;

Absorption;

Production unit;

Fixed cost;

Calculated period;

Abstract

Manufacturing overhead is applied to the units produced within a reporting period. This is not a direct cost of a product. As like as labour cost, product cost, manufacturing overhead has to enlisted with the system so that we can get good output from inventory management. In every sector of business, there is a big illusion of absorption with the sight of over absorbed and under absorbed product costs. The absorption is under the Generally accepted accounting principals (GAAP), where the absorption cost can be applied and count too. Manufacturing overhead is not a danger, but it's a problem for us in many purposes of business. This paper is going to give a suitable solution to this problem with the tools of business and technology. This paper will also create a connection between business and technology again by which we will see the impact of technology in business. We are going to see that the actual cost using FIFO, LIFO, etc. This paper aims to show something new by which the business sector can get the best solution for this manufacturing overhead matter. In case, we all know that many things are related to this matter. Such as factory burden, production overhead, factory overhead, etc. We will role these things with the sight of business and computer science.

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1. Introduction

Manufacturing overhead is a tension for the business sector, and it's a big issue for calculating the cost of any product. Manufacturing is a competitive global market, and efforts to mitigate climate change are at the forefront of public perception (Garwood,2018). Firstly, the business arena solved this problem with normal effort, but in the network of a big chain, it has become a huge problem for investors and productions too. This study analyses the impact of the opening of the West Coast Expressway in Korea on the location of new manufacturing establishments near the road (Kim,2018). This problem applies to production units according to a reporting period. It is therefore recommended that a cost reduction strategy with an emphasis on production overhead cost and administrative overhead cost should be embarked upon if their profit maximisation and wealth creation objective must be achieved (Oluwagbemiga,2014). The list is given below:

Depreciation	Cost of asset
Property tax	Local state govt.
Rent	Company's payment for each month
$Salary_1$	Maintenance personal
$Salary_2$	Manufacturing managers
$Salary_3$	Materials management pieces of stuff
$Salary_4$	Quality control stuff
Supply	Not directly associated with products
Utility	For the factory
Wages	For building janitorial stuff

Table 1: Some overhead examples

1.1 D.M & D.L:

Here, DM means direct materials, and DL means direct labour. We are now discussing direct materials with a suitable data set and are going to solve this with the revolutionary genetic algorithm: It also highlights the difference between the traditional cost system and ABC in regards to allocating manufacturing and non-manufacturing overhead costs and assigning direct costs to products (Huang,2018).

A cement company manufactured 5000 bags of cement. Now, we are going to evaluate their direct materials cost with the raw item and fitness of product or quantity. We are considering a few tables to solve this direct materials issue:

Raw materials	Quantity of products	Actual cost	Standard cost
Stone	50 tons	$45/tons	$70/tons
Sand	100 tons	$30/tons	$35/tons
Clay	150 tons	$10/tons	$15/tons

Table 2: Data set of sample product

The actual calculating cost of the product:
We can assign direct cost as DC, actual quantity as AQ and actual cost as ACAs we know,
D.C = A.Q * A.C

Stone	50 tons	*	$45	=>	$2250
Sand	100 tons	*	$30	=>	$3000
Clay	150 tons	*	$10	=>	$1500

Table 3: Direct material cost

Calculating the Casual cost of the product:

We can assign casual cost as CC, actual quantity as AQ, and standard cost as SC. As we know,

C.C = A.Q * S.C

Stone	50 tons	*	$70	=>	$3500
Sand	100 tons	*	$35	=>	$3500
Clay	150 tons	*	$15	=>	$2250

Table 4: Direct material cost for standard

Price variable = (Table 3 dataset – Table 4 dataset):

Stone	$2250	-	$3500	=>	$1250 (can be afford) (Fix)
Sand	$3000	-	$3500	=>	$500 (can be afford)
Clay	$1500	-	$2250	=>	$750(can be afford)

Table 5: Final fixing of DM

Evaluating DL with this formula. Here is the example of DL:

Actual hours per unit: 1.00

Standard hours per unit: 0.50

The actual rate of labor per hour: $10

A standard rate of labor per hour: $5

Code of DM:

```
package com.google.android.material.math;
public final class Dm {
public static double DEF_EPS = 0.0004;
Secure Dm() {

public static double dm1(double x, double y, double xx, double yy)
 {
 double a = (x - xx);
 double b = (y - yy);
return (double) Math.hypot(a, b);
}
public static double distanceToFurthestCorner(
double pointX,
double pointY,
double rectLeft,
double rectTop,
double rectRight,
double rectBottom) {
return dm_max
(
dis(poia ,rectTop),
}
private static double max(double p, double q, double r, double s)
 {
return p > q && p > r && p > s ? p : q > r && q > s ? q : r > s ? r : s;
}
public static double floorMod(double a, int b)
```

```
 {
int r = (int) (a / b);
if (Math.signum(a) * b < 0 && (t * b != a)) {
h--;
}
return a - h * b;
}
public static int floorMod(int a, int b) {
int h = a / b;
if ((a^ b) < 0 && (h * b != a)) {
h--;
}
return a - h * b;
}
```

2. Materials and Methods

To solve this matter we need to divide the total system with two-part. One part includes DM and DL which are in direct cost part. Another part includes an indirect cost. The integration of direct materials and direct labor is the cost of production, indirect cost means manufacturing overhead. These two parts are valid with GAAP and IFRS. As we know the problem is indirect cost impacts also in the actual price of a product. But, including manufacturing overhead in the list of costs bears a very big confusion in the industrial management system. That's why we are diving into the materials of this problem with two parts. Large scale emergence of mature cloud solutions, ranging from software-as-a-service based solutions for business management (Morariu,2016).After that, we have to evaluate these terms which are given below:

i. Factory overhead
ii. Production overhead
iii. Factory burden

Finally, we need to solve two cases. Cases also are given below:

- Quantity of products manufactured
- Actual overhead costs incurred

We already have seen an example of DM and DL using an open-source dataset. There we have gotten a result. Using this result we have to design an inventory system with information technology. To create a new inventory system we need a data storage station and data updating system also. Data storage systems can use for both collection and recollection of the production and factory overhead rate. The data update system will notify the company about the factory burden rate and impact factor. To meet external financial reporting requirements, fixed (i.e., capacity-related) manufacturing overhead costs are typically applied to inventory via the use of a predetermined overhead application rate (Snead,2010). Using these two data science formats we can reach to solve the final case which is the Number of products and actual overhead costs incurred. A manufacturing cost model is created that includes all labor, material, and overhead costs for novel mycelium-based biocomposite sandwich structures produced by a commercial firm (Jiang,2016). Here is the topology model is given below:

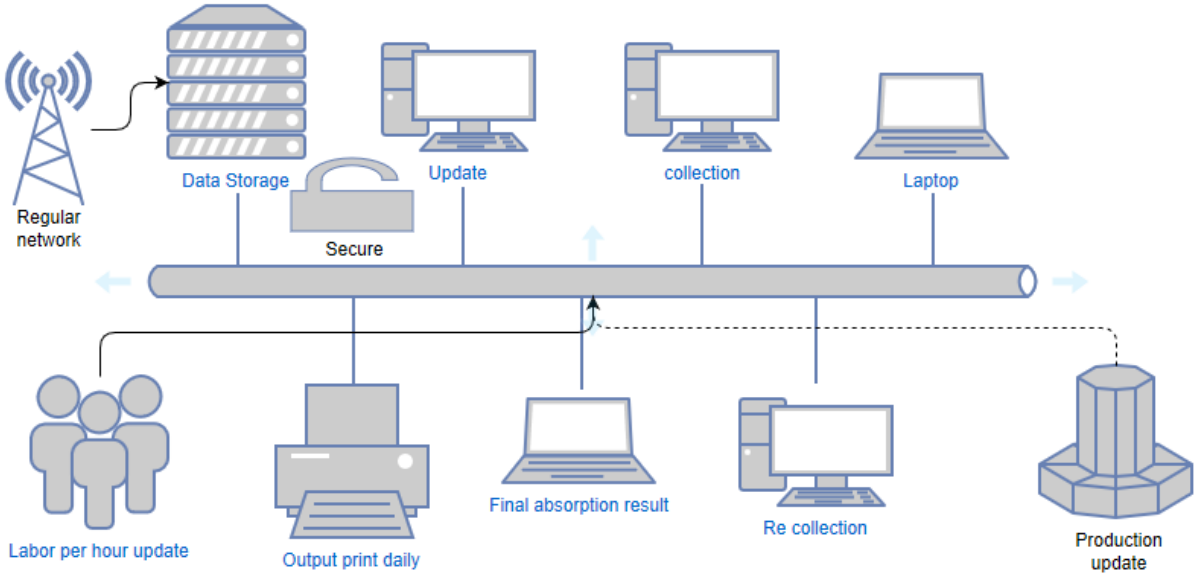

Figure 1: Total system topology

Traditional cost accounting applied by most remanufacturing industries assumes that manufacturing overheads are driven by the volume of production(Abu,2017). If the amount of overhead assigned to the products manufactured is greater than the amount of overhead incurred, the products have over absorbed the overhead costs. If the amount of overhead assigned to the products is less than the amount of overhead, actually incurred, the products have under absorbed the overhead costs. In the case of these two terms, we can use the form of data science. After using Figure 1 topology we can get the daily update of products including labors and it's with the ratings of per hour. So, it's a huge impact on solving this problem. Data collection and recollection is one of the best ways to solve this problem. Because, sometimes companies are selling old products with the LIFO system for their selling policy, then the update sells information to store the new data with a re-collection system which is given in the figure 1 topology system.

3. Results and Discussions

The result of this research is now very unique and simple. We are getting now two inputs. One is the Actual volume of data and another is the planned volume of data. The output will be shown following this equation:

Actual volume < Planned volume = Under absorbed
Actual Volume > Planned volume = Over absorbed.
So, the output of integrating part of the overhead rate is:

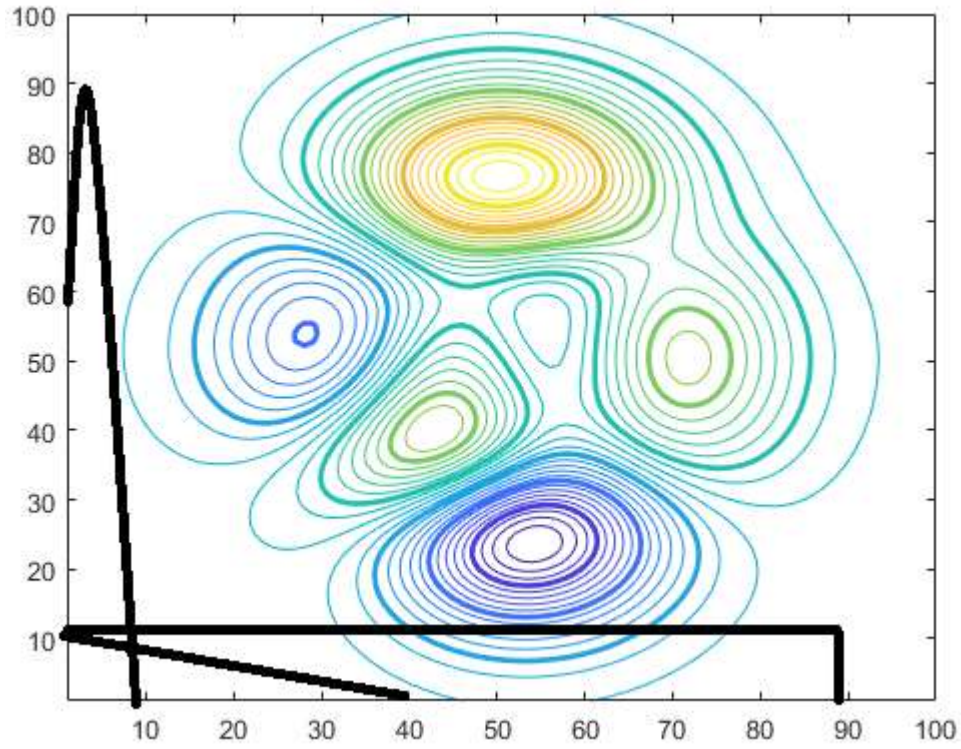

Figure 2: Math work optimisation

4. Conclusion

Although manufacturing overhead appears as simple it's a broader subject with an immense impact in the business sector, particularly in production. Above mentioned solutions, formulas, and methods may simplify the obstacles regarding manufacturing overhead. As it is related to cost, we also may solve both the fixed and variable cost issues with the intuiting impact factor. Applying the mentioned equation we can get the luster solution to this problem. Manufacturing companies usually overlook this issue, but whenever they come to calculate their overall cost annually, they always get a big tension for this manufacturing overhead problem. If they use this equation but with the update data of per hour, they won't face the problem probably. The problem may be solved both technically and mathematically in every phase arrived in production or, manufacturing procedures. Actual and accurate data as well as methods mostly can minimise the ultimate cost of a product. Moreover, using this final equation manufacturing companies can put a good range of product prices.

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