Pdf 1

1.Operations management (OM) is the administration of business practices to create the highest level of efficiency possible within an organization. It is concerned with converting materials and labor into goods and services as efficiently as possible to maximize the profit of an organization.

Operations management (OM) is the business function responsible for managing the process of creation of goods and services. It involves planning, organizing, coordinating, and controlling all the resources needed to produce a company’s goods and services.

5b

1.Forecast Bias

Forecast bias is simply the difference between forecasted demand and actual demand.

Forecast Bias = S(Forecast – Actual Demand)

This figure seeks to determine whether your forecasts have a tendency to over-forecast (i.e., the forecast is more than the actual) or under-forecast (i.e., the forecast is less). This metric can also be calculated as a percentage using the formula –

Forecast Bias Percentage = SForecast / (S Actual Demand)

Forecast bias is unique because it specifically shows whether your forecasts are systematically over- or under-forecasting, allowing for corrections as needed.

2. Mean Average Deviation (MAD)

MAD shows how much, on average, your forecasts have deviated from actual demand.

Because the MAD metric calculates deviation, or error, in units, it is ideal for comparing the results of two or more forecast models applied to the same variable (e.g., product, product category, labor). However, it is not suitable for comparing different data sets as average deviations can be subjective.

MAD = 1/n S|Forecast – Actual Demand|

For example, a forecast error of 1,000 units can be problematic for high-value goods that sell an average of 3,000 units per year, but not for fast-moving consumer goods that sell in the hundreds of thousands in the same period.

3. Mean Absolute Percentage Error (MAPE)

Finally, MAPE is very similar to MAD, except it expresses forecast error as a percentage (rather than units) relative to actual demand. Essentially, MAPE measures the average percentage points your forecasts are off by, making it a quick and easy-to-understand way of representing forecast error.

MAPE = 1/n S|(Forecast – Actual Demand)/(Actual Demand)| 100

However, the downside of MAPE is that it does not provide any insight into whether the forecast is over- or under-forecasting.

Two of the most common forecast accuracy / error calculations include MAPE – the Mean Absolute Percent Error and MAD – the Mean Absolute Deviation. Let’s take a closer look at both: A fairly simple way to calculate forecast error is to find the Mean Absolute Percent Error (MAPE) of your forecast.

6 a A bathtub curve is a visual representation of the failure rate of a product or group of products over time. By plotting the occurrences of failure over time, a bathtub curve maps out three periods that an asset experiences within its lifetime: Infant mortality period. Normal life period

Planning maintenance work on a long term basis.

Issuing maintenance work orders.

Storing maintenance materials.

Deciding inspection methods and routine

7 a Lean management is an approach to managing an organization that supports the concept of continuous improvement, a long-term approach to work that systematically seeks to achieve small, incremental changes in processes in order to improve efficiency and quality.

B The seven factors affecting a location decision in operations management are facilities, competition, logistics, labor, community and site, political risk and incentives, according to Reference for Business

C a fixed-position layout, the project remains in one place, and workers and equipment come to that one work area. Examples of this type of project are a ship, a highway, a bridge, a house, and an operating table in a hospital operating room. A system that addresses the layout requirements of stationary projects.

D Assignable variation: A variation whose source can be identified. This source is generally a major factor, e.g. tool failure.

Common causes of variance are the usual quantifiable and historical variations in a system that are natural

Pdf 2

### 1 a **Operations management is the process that generally plans, controls and supervises manufacturing and production processes and service delivery. Operations management is important in a business organization because it helps effectively manage, control and supervise goods, services and people.**

### **Key Benefits of Effective Operations Management**

#### **1. Product Quality**

The first unit in a typical firm that checks durability and reliability in a product is the operations management. Operations management sees to quality of products or goods which would suit customers on and after delivery. When a product is of quality, it gives you an edge compared to your competitors.

#### **2. Productivity**

Productivity is defined as the ratio of input to output and it is the only way to verify employees input. Operations management ensures appropriate staffing of employees to resources so as to get maximum result. The only way to ensure productivity is through an effective operations management.

#### **3. Customer Satisfaction**

There is no feeling for a manager or an employee as a customer getting the utmost satisfaction ever. Operations management rightly ensures this coupled with quality product. Customers make organization thrive and they must be treated well in every way necessary and possible.

#### **4. Reduced Operating Cost**

Through productivity, quality products and customer satisfaction, cost incurred on products servicing is maximally reduced. This simultaneously leads to increased revenue. Only operations management can make this possible. In reducing operating cost, there is also waste reduction. Exact number/size of products is produced as requested

3 a google per asani se mil jayega

7 a Acceptance sampling is a quality-control measure that lets a company determine the quality of an entire product lot by testing randomly selected samples and using statistical analysis. When done correctly, acceptance sampling is effective for quality control.

B bathcurve upper hai

C Demographics. Perhaps the most important factor when picking a restaurant location is your target audience. ...
Accessibility and visibility. ...
Competition. ...
Neighborhood safety. ...
Business regulations. ...
Affordability. ...
Space necessities. ...
Leave enough space for delivery & pickup.

D lean management upper h

Pdf 3

1 a

Order qualifiers are necessary attributes that a product must possess for it to be entered into competition. Order winners, however, are the ‘winning’ attributes that lead to customers buying a product.

Order winners are the competitive advantages such as quality, delivery speed, reliability, product design, flexibility, and image that cause a firm’s customers to select that company’s products or services

2a Mean time between failures is a measure of an asset’s reliability. It shows you how long, on average, an asset can run before you need to repair it. On a basic level, you can use MTBF as a maintenance metric to see how well your team maintains assets

Take for example a mechanical mixer designed to operate for 10 hours per day. Suppose the mixer breaks down after normally operating for 5 days. The MTBF for this case is 50 hours as calculated below.

MTBF = (10 hours per day \* 5 days) / 1 breakdown = 50 hours

B Mean time to repair (MTTR) is a maintenance metric that measures the average time required to troubleshoot and repair failed equipment. It reflects how quickly an organization can respond to unplanned breakdowns and repair them

For example, if you have spent 50 hours on unplanned maintenance for an asset that has broken down eight times over the course of a year, the mean time to repair would be 6.25 hours. What is considered world-class MTTR is dependent on several factors, like the type of asset, its criticality, and its age.

C Availability, by definition, is expressed as **the percentage of actual operation time that the equipment is used out of the total time being observed**

Ex nhi mila

Or yh questions niche bacha h vo dekh lena

6 a capability (known in some systems as a key) is **a communicable, unforgeable token of authority**. It refers to a value that references an object along with an associated set of access rights. A user program on a capability-based operating system must use a capability to access an object

Designing flexibility into the system.

Differentiating between new and mature products or services.

Taking a “big-picture” approach to capacity changes.

Preparing to deal with “chunks” of capacity.

Attempting to smooth out capacity requirements

Examples of capacity building activities include: Training: One-on-one or group training, whether face-to-face or online, can increase personal knowledge and skills surrounding an issue

B

Lean pull system aims to create a workflow where work is pulled only if there is a demand for it. The purpose of implementing a pull system is to build products based on actual demand and not on forecasts. By doing so, your company can focus on eliminating waste activities in the production process.

D

Variables control charts plot continuous measurement process data, such as length or pressure, in a time-ordered sequence. In contrast, attribute control charts plot count data, such as the number of defects or defective units

Attribute data focuses on numbers, variable data focuses on measurements. For example, suppose you’re gathering data on defective products that your assembly line turns out. Attribute data simply classifies the output as defective or not defective.