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Data Analytics Session

**By – Amol Lele**

Saturday, 11.02.2023

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# Attendees

Kamlesh Wagh, *Project Manager*

Sachin Vaishnav, *Project Manager*

Vijaya Pagar*, Sr. Software Developer*

*Anurag Kumar, Software Developer*

# Highlights of the session

## Data Analytics and Business Intelligence (BI)

1. Data analytics is the science of analyzing raw data to make conclusions about that information.
2. Business Intelligence is to use data/information intelligently for business decisions.

## Types of Data Analytics

1. **Descriptive Analytics -** It tells *what* happened in the past. Eg., RCA report, log analysis, business reports study etc.
2. **Diagnostic Analytics -** It tells *why* something happened in the past.
3. **Predictive Analytics -** What’s most likely to happen in the future
4. **Prescriptive Analytics -** Actions you can take to affect those likely outcomes.

Example - How a doctor analyses a patient.

## Data Arrangements & Cleaning

1. Make sure all data is in the same format. Bring all data in a similar format and check every data has the same no of fields or study it in other ways.

| **Field 1** | **Field 2** | **Field 3** | **Field … N** |
| --- | --- | --- | --- |
|  |  |  |  |

1. Check For Missing data, wrong data, and important fields like date, values etc.
2. Search for erroneous data (Negative values, text, number formats etc.)
3. Use Filters for small data in excel, Use Pivot Table for Large Data in Excel.

## 

## Some General Rules

* No Observation without *Recording/Report.*
* No Analysis without *Observation.*
* No Analysis without *Action.*
* No Action without *Analysis.*

## 

## Demonstration of Sample Data Analysis

* **Find Purchaser Efficiency -** After Data study of the Purchase Order data, we analysed that Mr. Akshay Akkar is handling 38% of all Purchase orders and around 100 crores of the purchase amount.
* **Vendor Efficiency -**
  + Checked Delivery % of a Vendor
  + Based on Lead Time - 10 days, PO Date, GRN Date etc.
* **Work Load On An Employee**
* **Work Load Distribution**
* **Productivity Measurement -**
  + Based on the different Criteria (Man hours, No. of line items in a PO, No. Of Vendors per Day etc)
  + Based on Value addition.
  + Results (Quantify) / Efforts (Quantify) = Productivity Score

## Descriptive Data Analytics

* **Summarising Data -**
  + Count
  + Average
  + Minimum
  + Maximum
* **Visualising Data -**
  + Graphs
  + Charts
  + Reports
  + Pictures / Graphics

## Asian Paints Opportunity Data Analysis Example

* **Partial pallet avg 1737, full pallet avg 815**
* **In a whole year system touches the pick 1806 pallet counts only once**
* **In a whole year system hits the lowest count 56 pallets**
* **Design a system based on the input to give optimum throughput.**

TIP - When there is a large variation in the Data, the Average is misleading. Then we need Frequency Distribution Diagram. Calculate percentile per day/hour.

# Tools for Data Analysis

* Curiosity is the key tool / key skill to be successful at Data Analysis.
* Power BI
* Tableau
* Qlikview
* QlikSense
* Flexim

# Other Notes

* **Direct Analysis of Data** When the data is present
* **Surrogate / Indirect Analysis of Data** When the direct data is not available then analyse different available data that has some impact on direct data.
* Curiosity is the tool / key skill to be successful at Data Analysis.

# Action Items

1. Whenever someone visits a site or plant do write a report to your reporting manager with whatever observations he had.
2. Try to log data / capture data from each of the applications in the appropriate format for further study.
3. Start Using Excel for at least small data analysis on your own.

# Next Session Agenda Items

Next Session is to happen on 4th March 2023. In this session, further Diagnostic analysis and other types of analysis will be discussed.

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