Case Study: Acme HR Data Analysis

Name: Md Sahil

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Introduction:

Our case study is based on a telecom company Acme Telco which has been having a stressed financial situation for quite some time resulting in general unhappiness among its employees. Acme has a long-standing tradition of conducting employee satisfaction surveys but it has not paid attention to the detailed results coming out of the survey. Also, same with the attrition situation. In order to boost employee confidence to turn around the company, the President & CEO, Mrs. Jan Ramsey asked that the HR department conducts a detailed study of the employee situation, satisfaction, attrition reasons, etc. Currently, there is no clarity on information such as gender equality e.g. whether female employees are paid the same as male employees. She realizes that it is a good time to explore and find answers to such questions and take actions to improve the company image among its employees and potential future hires. The Chief Information Officer, Mrs. Jen Heinz has asked her Business Intelligence Director to pull data to conduct a detailed study. After spending a considerable amount of time, the BI team unearthed three different data sets containing (1) Basic Employee Data, (2) Employee performance and attendance data, and (3) Employee salary data.

About the Company:

Acme Telco is a small telecom company that develops, sells, and installs telecommunication devices such as network routers, conference call hardware, etc. for business needs. Acme has been operating for over a decade with a modest current headcount of close to 200 people and it has organized itself around the following 5 departments: Operations, IT, Sales, Software engineering, and Admin.

PHASE 1: Asking the right question and Identifying business task

Stakeholders:

1. Mrs. Jan Ramsey (**President & CEO**)
2. Mrs. Jen Heinz (**The Chief Information Officer**)

Goal:

1) Group size and demographics

       a. How many employees are currently employed by each department?

       b. What are the demographics of our current employees?

     i. Age

     ii. Gender

     iii. Marital Status

2) Salary structure

  a. What was the current total salary expense for each department?

  b. What is the salary structure for each demography of our current employees?

    i. Age

    ii. Gender

    iii. Marital Status

3) Performance results

  a. What was the distribution of employees in terms of their performance?

  b. Could we do a deep dive per group?

    i. Department

    ii. Age

    iii. Gender

    iv. Marital Status

4) Satisfaction scores

  a. How satisfied our employees are?

  b. Could we do a deep dive per group?

    i. Department
    ii. Position

    iii. Age

    iv. Gender

    v. Marital Status

5) Attrition

  a. How many employees have left the company in total?

  b. What were the main reasons for them to leave?

  c. How many of those reasons are voluntary and non-voluntary?

  d. Is there some pattern related to employee groups?

i. Department

ii. Age

iii. Gender

iv. Marital Status.

PHASE 2: Preparing the Data

Data source:

Data is given by Internshala Tableau Training Course.

Data details:

Data is given by Internshala Tableau Training Course in excel format. There are 3 sheets on excel file.

Metadata described in given below:

The dataset contains three tables:

1. **General HR information gathered from the HR information system I**

   a. Employee ID: Unique employee record number used as a key across different databases

   b. Position: Role the employee held

   c. DOB: Date of birth of the employee

   d. Gender: Employee gender (Male / Female)

   e. Marital Status of the employee: Single / Married / Divorced / Widowed

   f. Date of hire: Date when the employee was hired by the company

   g. Date of termination: If the employee has been terminated, the date on which they were terminated or the last official working day

   h. Termination reason: The reason why the employee left the organization

   i. Employment status: Whether the employee is currently with the company, terminated for a reason, or they left themselves

2. **Performance and Employee satisfaction survey results gathered from the HR information system II**

a. Employee ID: Unique employee record number used as a key across different databases

b. Dept: which department the employee worked in – Admin / Executive Office / IT / Operations / Sales / Software Engineering

c. Manager name: Employee's manager name

d. Perf Score: Most recent employee performance rating – Exceeded expectations / Met Expectations / Improvement needed. Employees with 'Improvement needed' are generally moved towards a performance improvement program in which they are monitored for about 3 – 6 months after which a decision is made whether to continue to employ them let them go depending on the performance during the improvement program.

e. Emp. Sat: Employee satisfaction score – rating given by the employee on how much they are satisfied with their employment with the company. The survey is conducted once a year in a confidential way. A rating of 1 means the employee is highly dissatisfied and a rating of 5 means that the employee is highly satisfied. However, it is noticed that the employees very rarely gave a score of 1 or 2

f. Date of the last perf. Review – Date on which the most recent performance review was conducted

g. Late days: how many days the employee came late to work in the last one month time

h. Absent days: how many leave days the employee availed in the last one year

3. **Employee salary details gathered from the financial information system**

a. Employee ID: Unique employee record number used as a key across different databases

b. Salary: Annual salary of the employee in US

PHASE 3 & 4: Process and Analyzing the Data

First Clean the data using Excel then load the cleaned the data into Tableau public for analyzing the data. Age of the employee calculate from DOB of employee in Tableau.

PHASE 5 & 6: Visualizations and Act

I used Tableau Public run further analysis and generate visualizations that support the key findings in the analysis.

For full visualization follow the link:

https://public.tableau.com/app/profile/md.sahil/viz/AcmeHRDataAnalytics/HRInsight

Here are some Key findings of the analysis:

1. Female Employee ratio is higher than male.
2. 43.96% Employees are single.
3. Most of the Employees are from Operations Dept.
4. Maximum portion of the Employees are in from Product technician I category then next Product Technician II category.
5. Average salary of a male employee slightly higher than female employee.
6. Employee with single marital status paid slightly more than employee of other marital status.
7. Divorce people get less salary than other category and in divorce category average salary of male higher than female.
8. Although Operations department has highest employee but average salary of an employee in Operations department is lowest.
9. It has observed that average salary increased with increasing age group.
10. Performance of employee slightly better than male.
11. Single people performance is better than married. In widow category no employee needs improvement.
12. Sales departments Employees are more satisfied employees whereas Operation department and executive office employees are less satisfied.
13. Employees from age group 29-35 and above 60 are less satisfied.
14. Married employees are less satisfied.
15. Male employees are less satisfied.
16. Most of the termination happened voluntarily.
17. Top reason of voluntarily termination is "Found a better Job" and "Unhappy".
18. Top reason of termination for a cause is "Attendance" and "Absconded".
19. Most of the terminated employee are from married and then single category. And Most of them voluntarily terminated.
20. 50% termination happened in female voluntarily.
21. Maximum termination observed in age group 36-45.
22. Maximum termination observed in Product technician I category then next Product Technician II category.