



Data Analysis Report

Epoch Systems

Analysis Report

A. Introduction:

Epoch Systems, a Winnipeg based publicly traded company, which specializes in the manufacture of drones, is facing an economic recession in the current year. In a bid to maintain its current level of share value and meet investor expectations, management has decided to embark on a cost-cutting exercise, with layoffs of its workforce as a large component. As a data analyst within Epochs data office, my task is to retrieve data from the employee database and provide information that will enable management to take a more data-driven approach to decision-making.

B. Data Sources:

The employee database consists of six tables, which include the following:

Departments table: consists of a department number and department name.

Departments-employee table: consists of the employee number, department number of employee and the start and end dates of the employees' time at the department.

Departments-manager table: consists of the employee number, department number of employee and the start and end dates of the employees' time at the department for all managers.

Employee table: primary employee table which consists of employee number, birth date, first name, last name, gender, and hire date.

Salaries table: contains employee number, annual salary, from date and to date.

Title table: contains employee number, employee role/title, start date, and end date of role.

C. Analysis:

The following questions were raised during management discussions, and I have retrieved the data from the employee database to provide answers:

1. **Finding 1:** What is the total head count of all current employees at Epoch systems?

According to the analysis, the total head count of all current employees at Epoch Systems is **240124.**

2. **Finding 2:** What is the distribution of head count for current employees across the various departments?

The following table (Table 1) displays headcounts acquired across multiple departments, and the same data is plotted for easy comprehension (Figure 1).

Department	Headcount
Customer Service	17569
Development	61386
Finance	12437
Human Resources	12898
Marketing	14842
Production	53304
Quality Management	14546
Research	15441
Sales	37701

Table 1

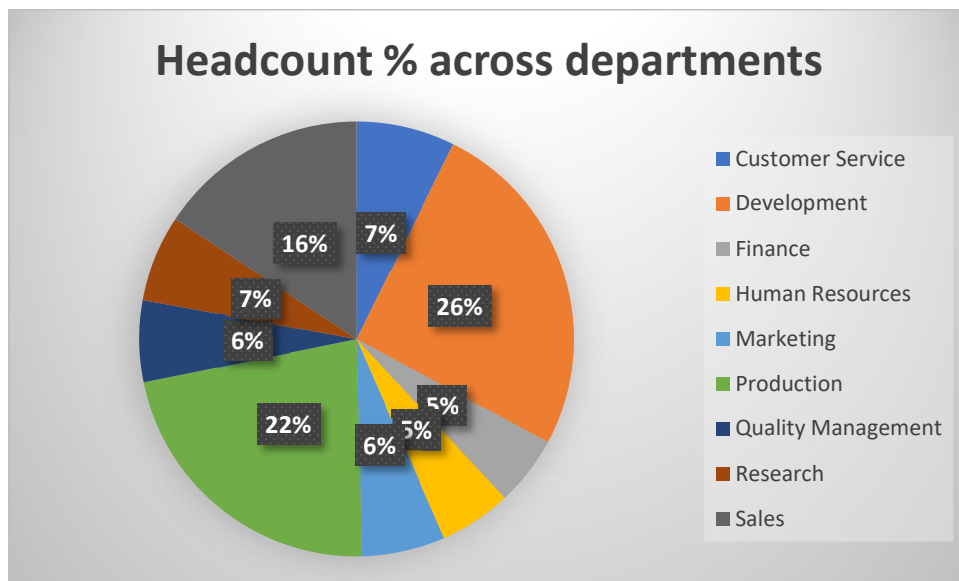


Figure 1

3. **Finding 3:** What is the average salary of all current employees by department?

The following table (Table 2) displays average salary paid across multiple departments, and the same data is plotted for easy comprehension (Figure 2).

Department Name	Average Salary
Customer Service	67285.2301781547
Development	67657.9195582055
Finance	78559.9369622899
Human Resources	63921.8998294309
Marketing	80058.8488074384
Production	67843.3019848417
Quality Management	65441.9934002475
Research	67913.374975714
Sales	88852.9694703058

Table 2

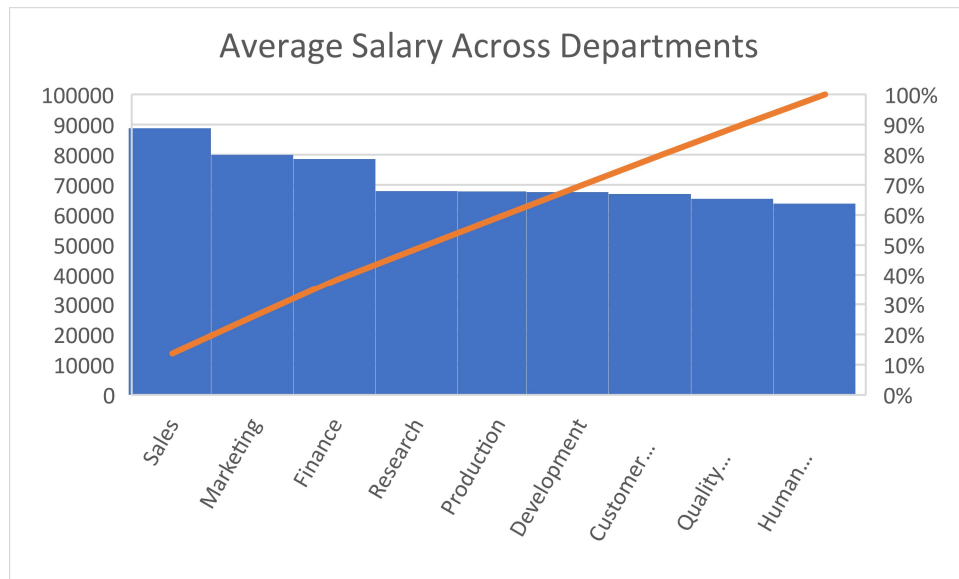


Figure 2

4. **Finding 4:** What is the max salary of all current employees by department?
The following table (Table 3) displays the maximum salary paid across multiple departments, and the same data is plotted for easy comprehension (Figure 3).

Department Name	Max Salary
Customer Service	144866
Development	144434
Finance	142395
Human Resources	141953
Marketing	145128
Production	138273
Quality Management	132103
Research	130211
Sales	158220

Table 3

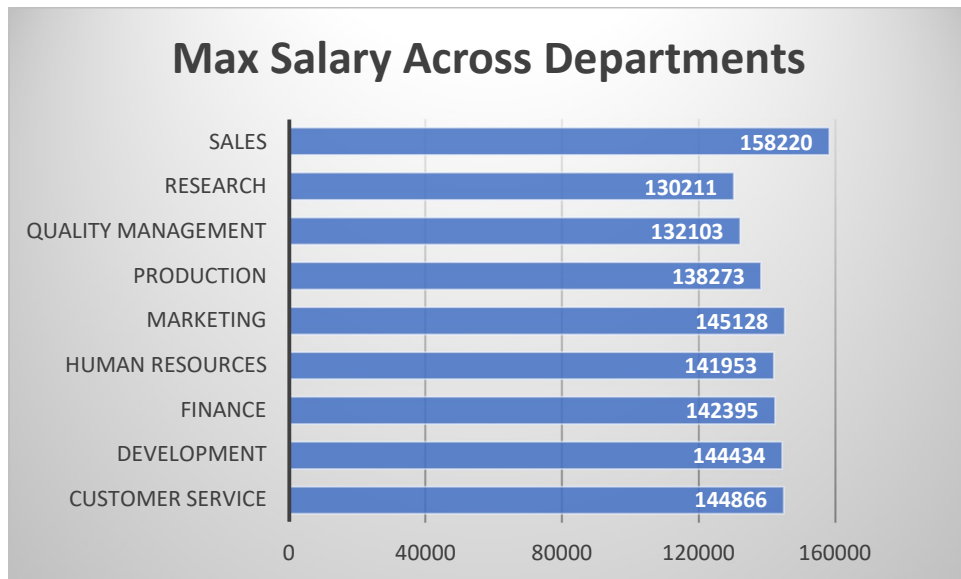


Figure 3

5. **Finding 5:** What is the count of current employees who are aged 70 and above distributed by departments?

The following table (Table 4) displays headcounts of employees aged above 70 years, across multiple departments, and the same data is plotted for easy comprehension (Figure 4).

Department Name	Above 70 years
Customer Service	1439
Development	5047
Finance	1008
Human Resources	1137
Marketing	1194
Production	4530
Quality Management	1247
Research	1332
Sales	3160

Table 4

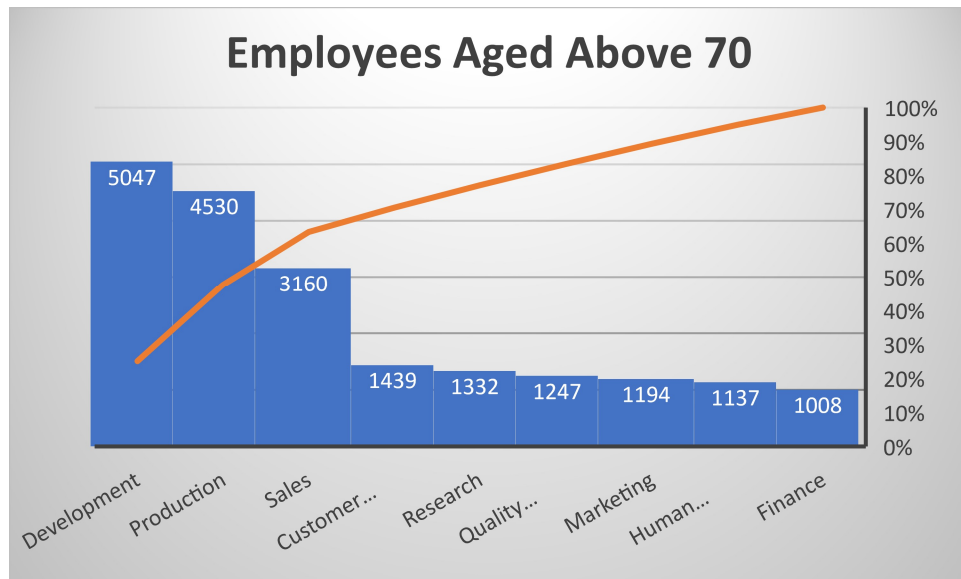


Figure 4

6. **Finding 6:** What is the average salary for employees grouped by titles?
The following table (Table 5) displays average salary acquired across multiple titles, and the same data is plotted for easy comprehension (Figure 5).

Title	Average Salary
Assistant Engineer	57317.5735785953
Engineer	59602.7377594165
Manager	77723.6666666667
Senior Engineer	70823.4376476338
Senior Staff	80706.4958792549
Staff	67330.6652041056
Technique Leader	67506.5902944836

Table 5

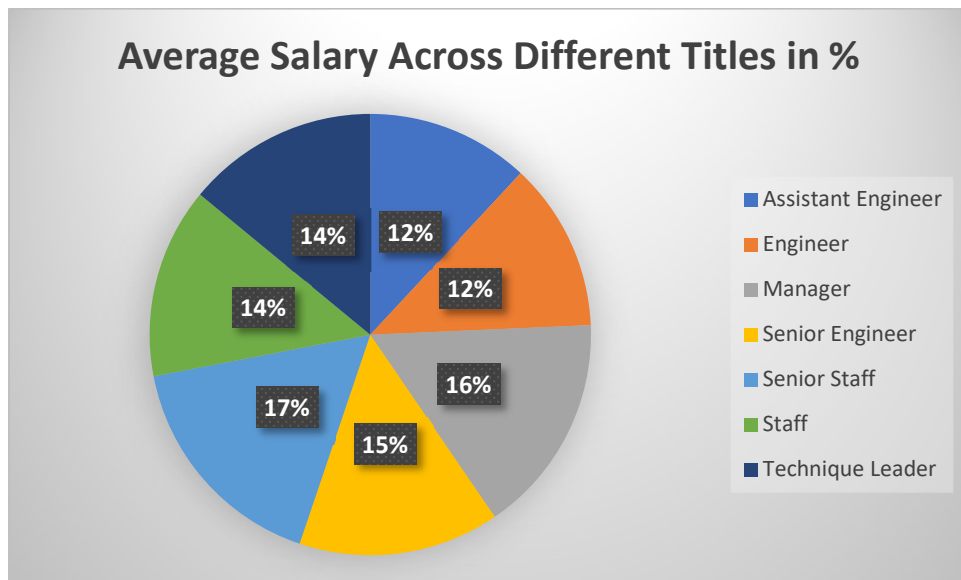


Figure 5

7. **Finding 7:** What is the head count of current employees grouped first by department and then by titles?

The following table (Table 6) displays head count of current employees grouped first by department and then by titles, and the same data is plotted separately for easy comprehension (Figure 6 - Figure 14).

Department Name	Title	Headcount
Customer Service	Assistant Engineer	68
Customer Service	Engineer	627
Customer Service	Manager	1
Customer Service	Senior Engineer	1790
Customer Service	Senior Staff	11268
Customer Service	Staff	3574
Customer Service	Technique Leader	241
Development	Assistant Engineer	1652
Development	Engineer	14040
Development	Manager	1
Development	Senior Engineer	38816
Development	Senior Staff	1085
Development	Staff	315
Development	Technique Leader	5477
Finance	Manager	1
Finance	Senior Staff	9545
Finance	Staff	2891
Human Resources	Manager	1
Human Resources	Senior Staff	9824
Human Resources	Staff	3073
Marketing	Manager	1
Marketing	Senior Staff	11290
Marketing	Staff	3551

Production	Assistant Engineer	1402
Production	Engineer	12081
Production	Manager	1
Production	Senior Engineer	33625
Production	Senior Staff	1123
Production	Staff	349
Production	Technique Leader	4723
Quality Management	Assistant Engineer	389
Quality Management	Engineer	3405
Quality Management	Manager	1
Quality Management	Senior Engineer	9458
Quality Management	Technique Leader	1293
Research	Assistant Engineer	77
Research	Engineer	830
Research	Manager	1
Research	Senior Engineer	2250
Research	Senior Staff	9092
Research	Staff	2870
Research	Technique Leader	321
Sales	Manager	1
Sales	Senior Staff	28797
Sales	Staff	8903

Table 6

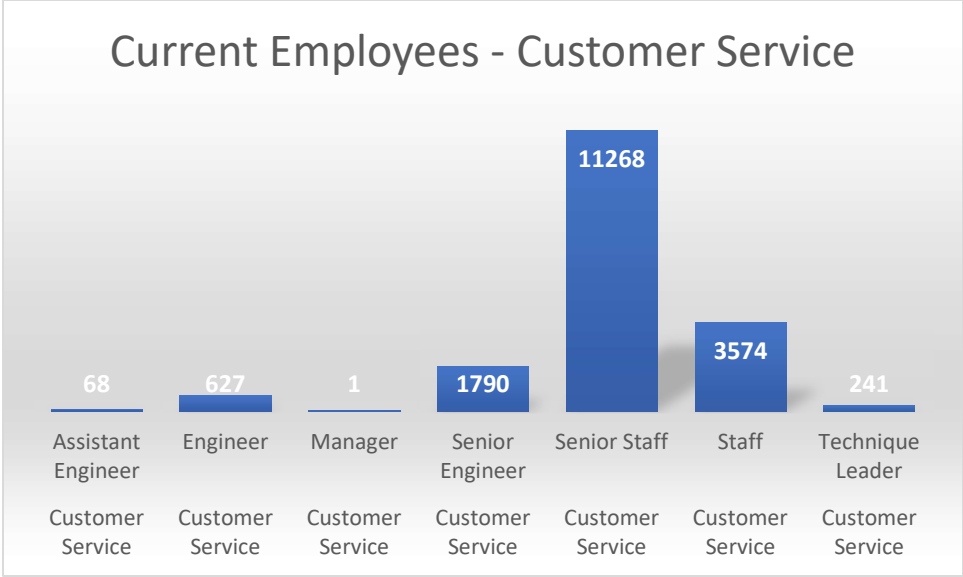


Figure 6

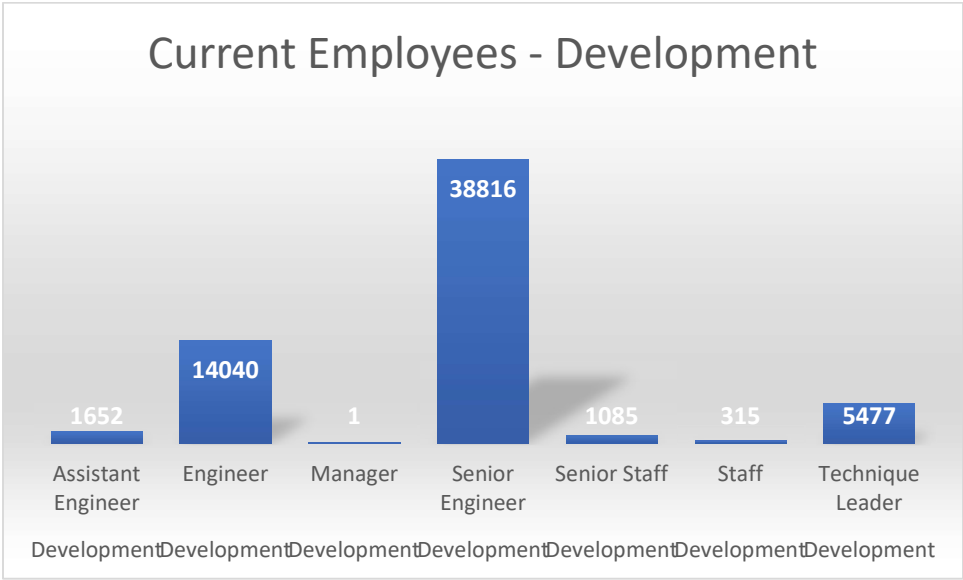


Figure 7

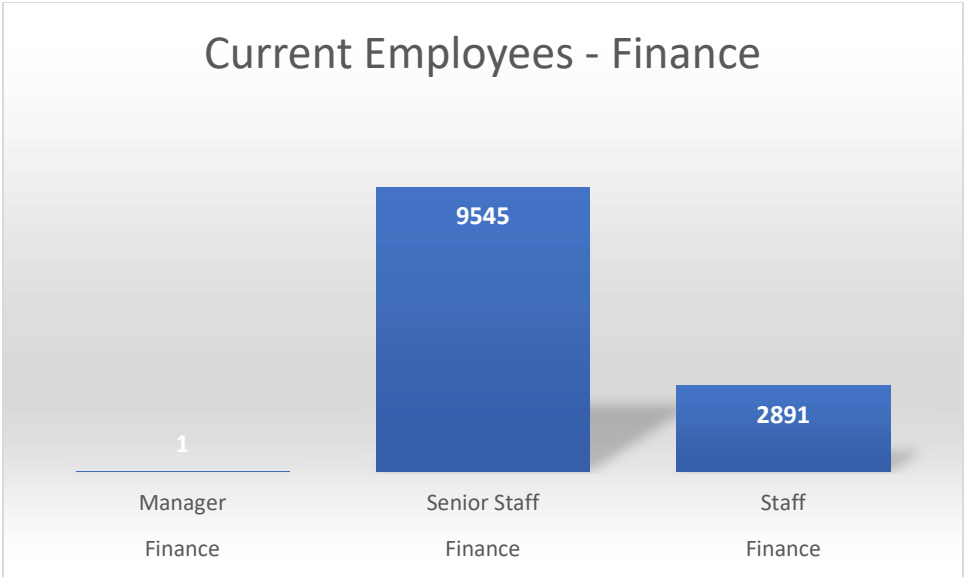


Figure 8

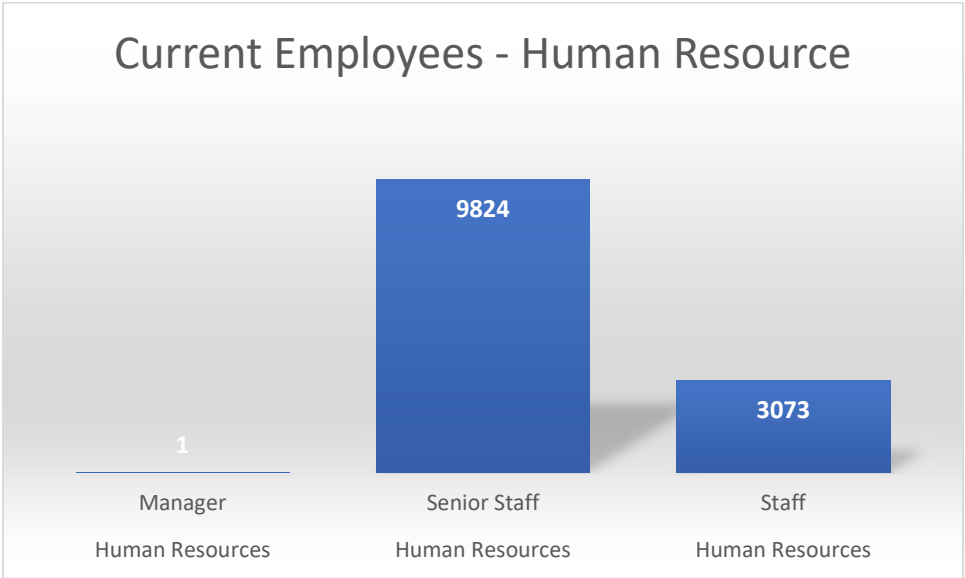


Figure 9

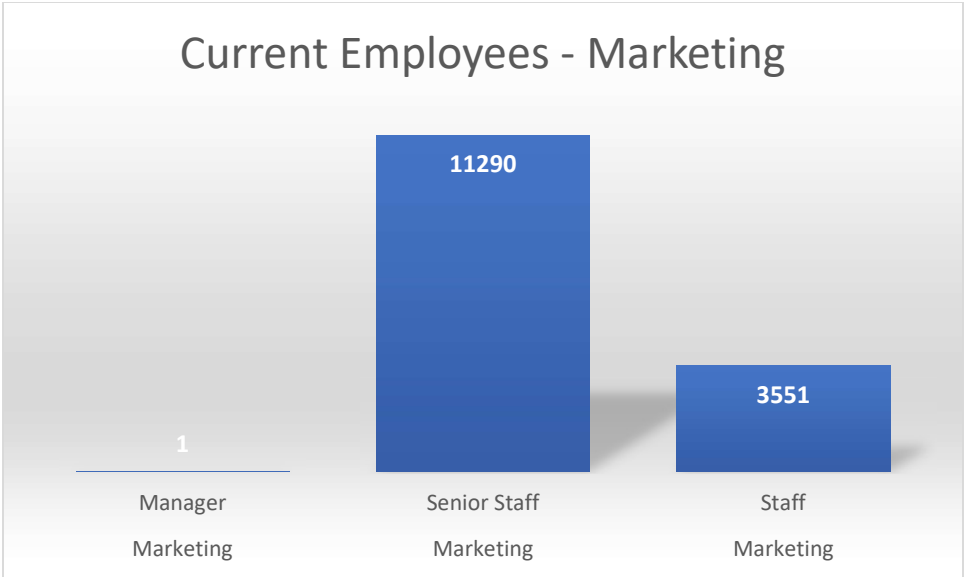


Figure 10

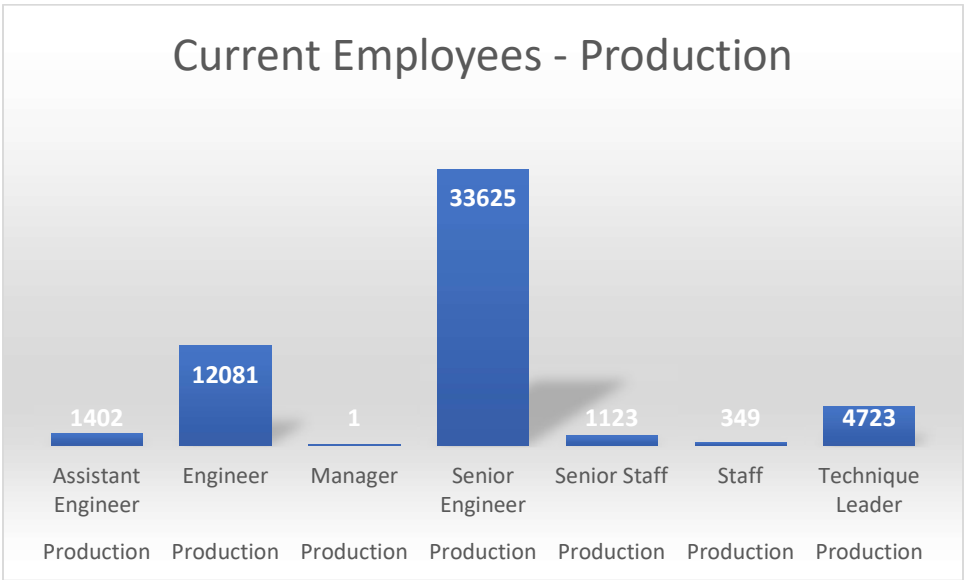


Figure 11

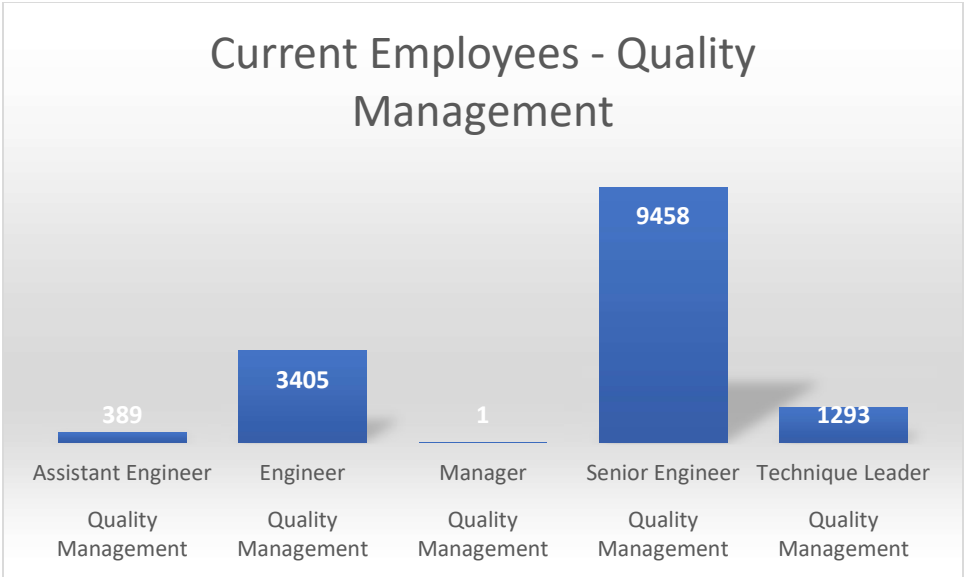


Figure 12

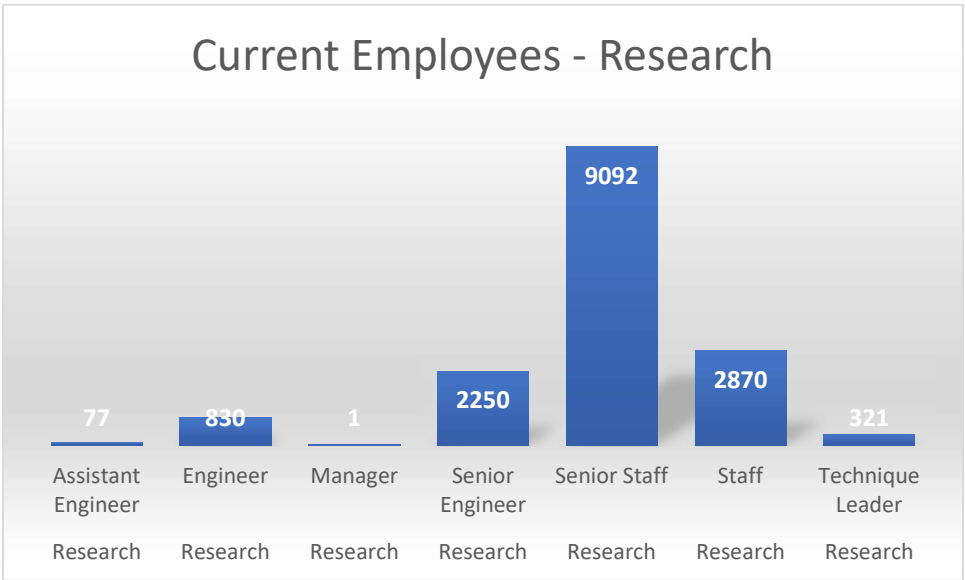


Figure 13

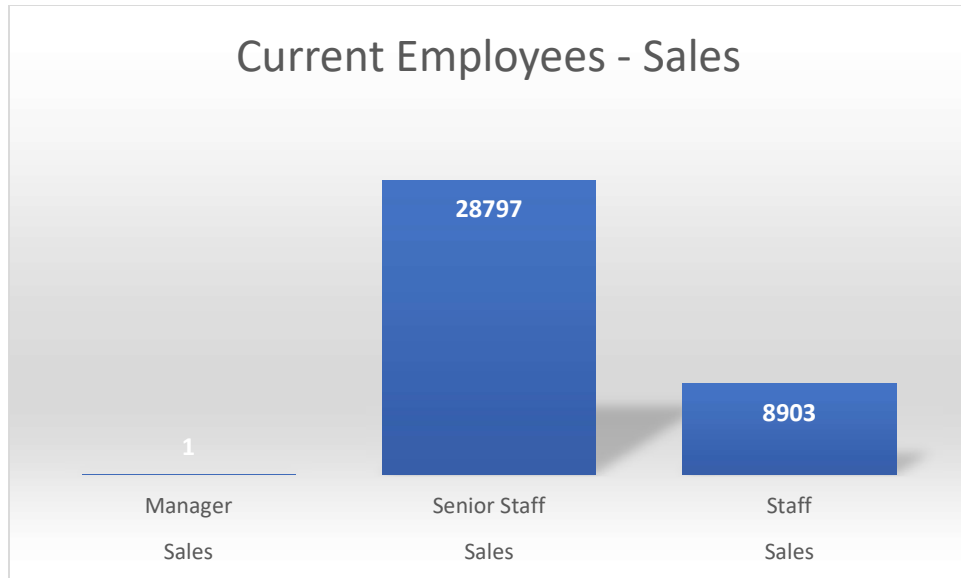


Figure 14

D. Conclusion:

We expect that the information acquired from the employee data base above will help Epoch's management make better decisions regarding where some workforce reductions can be made.