

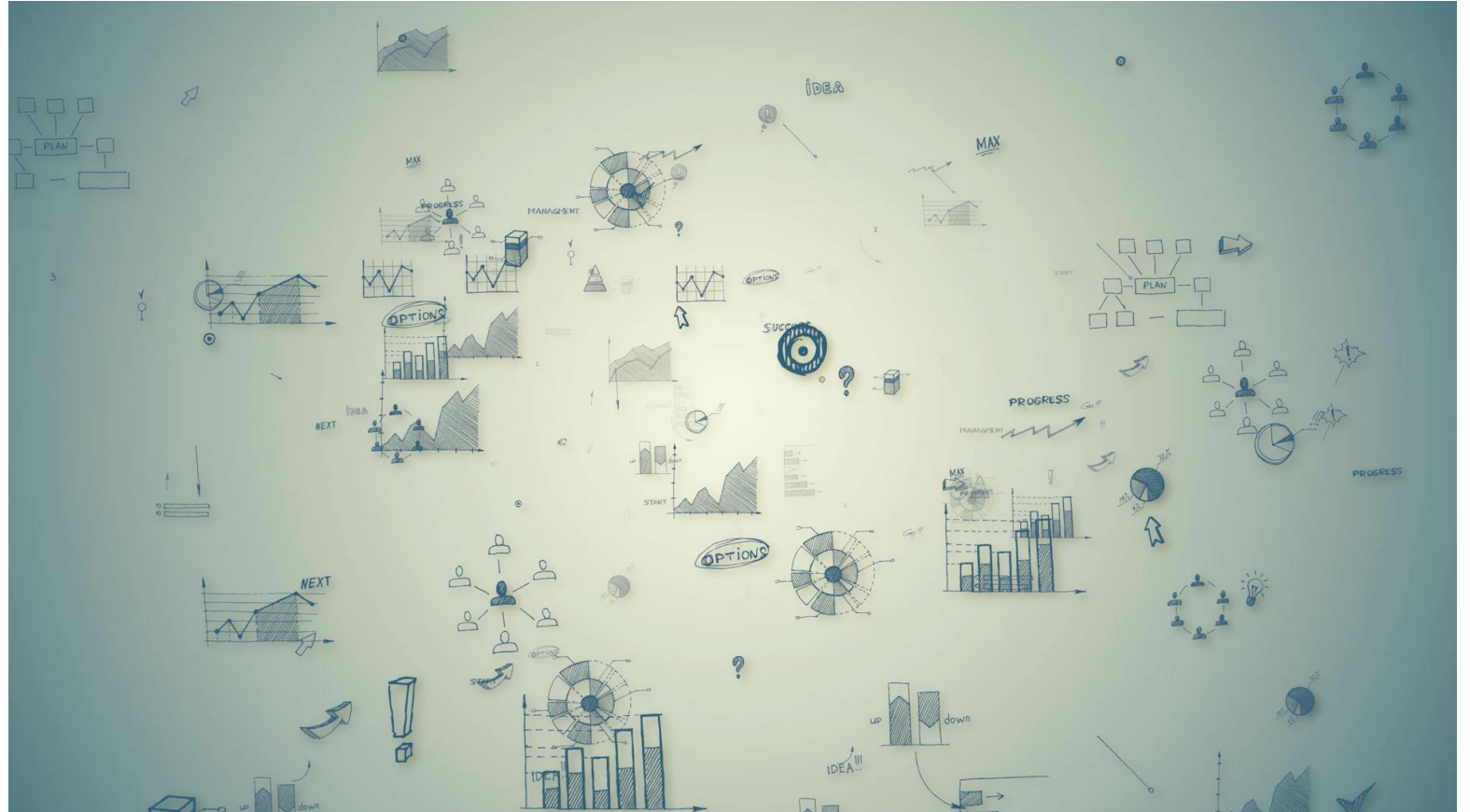
# Employee Success Analytics at NextGen Corp.

## Capstone Project Presentation

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**Date:** 26/07/2025



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# Business Overview

- **About NextGen Corp:**
  - Technology company focused on software and hardware innovation
  - Committed to attracting and retaining top talent
  - Current HR challenges: employee turnover, variable performance, salary disparities
- **Business Problem:**
  - Need for data-driven HR strategies to optimize retention, performance, and fair compensation



# Employee Retention Analysis: Insights

- **Trends & Patterns:**

- Top 5 longest-serving employees identified
- Turnover rate calculated for each department
- Main reasons for employee exits analyzed (e.g., compensation, work-life balance)

- **Recommendations:**

- Focus engagement and retention efforts in high-turnover departments
- Address key causes of attrition with targeted HR initiatives



## Who are the top 5 highest serving employees?

- The top five longest-serving employees at NextGen Corp are:
- David Moore** (Sales Representative) – **10 years**
- John Johnson** (Sales Manager) – **9 years**
- Frank Johnson** (Sales Manager) – **9 years**
- Jane Lee** (HR Specialist) – **9 years**
- Eve Wilson** (Sales Representative) – **8 years**
- Their long tenure demonstrates significant loyalty and organizational knowledge. These experienced employees can be valuable as mentors or culture ambassadors, supporting newer team members and helping maintain company stability.

--Who are the top 5 highest serving employees?

```
SELECT
    e.employee_id,
    e.first_name,
    e.last_name,
    e.job_title,
    e.hire_date,
    EXTRACT(YEAR FROM AGE(NOW(), e.hire_date)) AS years_served
FROM
    employee e
LEFT JOIN
    turnover t ON e.employee_id = t.employee_id
WHERE
    t.employee_id IS NULL    -- not in turnover, i.e., still employed
ORDER BY
    e.hire_date ASC         -- earliest hire date = longest serving
LIMIT 5;
```

	employee_id [PK] integer	first_name character varying (30)	last_name character varying (30)	job_title character varying (30)	hire_date date	years_served numeric
1	8	David	Moore	Sales Representative	2015-06-30	10
2	44	John	Johnson	Sales Manager	2015-10-27	9
3	11	Frank	Johnson	Sales Manager	2016-06-12	9
4	26	Jane	Lee	HR Specialist	2016-07-19	9
5	99	Eve	Wilson	Sales Representative	2016-10-13	8

# What is the turnover rate for each department?

## Insight: Turnover Rate by Department

- Engineering** has the highest turnover rate at **150%**, indicating that more employees left than are currently in the department. This suggests a significant retention challenge that could impact project continuity and morale.
- Marketing** follows with a turnover rate of **64.29%**, while **HR** has a rate of **54.55%**.
- Sales** shows the lowest turnover rate at **13.79%**, signaling stronger employee retention in that team.

### Actionable Recommendation:

Departments with high turnover – especially Engineering – should be prioritized for retention initiatives, employee engagement programs, and leadership review to address underlying causes and stabilize the workforce.

```
--What is the turnover rate for each department?
|
SELECT
  d.department_id,
  d.department_name,
  COUNT(DISTINCT t.employee_id) AS employees_left,
  COUNT(DISTINCT e.employee_id) AS total_employees,
  ROUND(
    (COUNT(DISTINCT t.employee_id)::decimal / NULLIF(COUNT(DISTINCT e.employee_id), 0)) * 100, 2
  ) AS turnover_rate_percent
FROM
  department d
LEFT JOIN employee e ON d.department_id = e.department_id
LEFT JOIN turnover t ON d.department_id = t.department_id
GROUP BY
  d.department_id, d.department_name
ORDER BY
  turnover_rate_percent DESC NULLS LAST;
```

	department_id [PK] integer	department_name character varying (30)	employees_left bigint	total_employees bigint	turnover_rate_percent numeric
1	1	Engineering	9	6	150.00
2	3	Marketing	9	14	64.29
3	4	HR	6	11	54.55
4	2	Sales	4	29	13.79



# Which employees are at risk of leaving based on their performance?

## Insight: Employees At Risk of Leaving (Low Performance)

- Two employees have been identified as being at risk of leaving due to low recent performance scores:
  - **Eve Davis** from **HR** (performance score: 3.0)
  - **David Moore** from **Sales** (performance score: 3.0)
- Early identification of these employees allows HR to provide timely feedback, support, or professional development to help them improve and stay engaged.
- Proactive intervention with at-risk employees can reduce turnover and improve overall team performance.

```
WITH latest_performance AS (  
    SELECT DISTINCT ON (employee_id)  
        employee_id,  
        performance_score,  
        performance_date  
    FROM performance  
    ORDER BY employee_id, performance_date DESC  
)  
SELECT  
    e.employee_id,  
    e.first_name,  
    e.last_name,  
    d.department_name,  
    lp.performance_score,  
    lp.performance_date  
FROM employee e  
LEFT JOIN turnover t ON e.employee_id = t.employee_id  
LEFT JOIN department d ON e.department_id = d.department_id  
LEFT JOIN latest_performance lp ON e.employee_id = lp.employee_id  
WHERE  
    t.employee_id IS NULL -- still employed  
    AND lp.performance_score <= 3 -- risk factor: low performance  
ORDER BY  
    lp.performance_score ASC, lp.performance_date DESC;
```

	employee_id integer	first_name character varying (30)	last_name character varying (30)	department_name character varying (30)	performance_score numeric (2,1)	performance_date date
1	12	Eve	Davis	HR	3.0	2025-05-01
2	8	David	Moore	Sales	3.0	2025-05-01

# What are the main reasons employees are leaving the company?

## Insight: Main Reasons Employees Are Leaving

- The leading reason for employee departures is **Personal reasons (11 employees)**, which could include relocation, health, or family needs.
- 7 employees** left after **finding another job**, highlighting possible competition or lack of retention incentives.
- 5 employees** cited **Career Growth** as their reason for leaving, suggesting the company may need to offer more advancement opportunities.
- Another **5 employees** left due to **Retirement**.

## Actionable Recommendation:

- Address career growth and job satisfaction by developing clear progression paths and engagement programs.
- Conduct stay interviews to better understand personal reasons and mitigate preventable turnover

--What are the main reasons employees are leaving the company?

```
SELECT
    reason_for_leaving,
    COUNT(*) AS number_of_employees
FROM
    turnover
GROUP BY
    reason_for_leaving
ORDER BY
    number_of_employees DESC;
```

	reason_for_leaving 	number_of_employees 
	text	bigint
1	Personal	11
2	Found Another Job	7
3	Career Growth	5
4	Retired	5



# Performance Analysis – Insights



- **Trends & Patterns:**
  - Total number of employees who left measured
  - Breakdown of high (5.0) and low (<3.5) performers
  - Departments with most high/low performers highlighted
  - Average performance by department calculated
- **Recommendations:**
  - Recognize & retain top performers
  - Offer targeted training for departments or staff with low performance

# How many employees has left the company?

```
--How many employees has left the company?  
  
SELECT COUNT(DISTINCT employee_id) AS employees_left  
FROM turnover;
```

	employees_left
1	28

## Insight: Employees Who Have Left the Company

- A total of **28 employees** have left NextGen Corp.
- This figure provides a benchmark for overall attrition and highlights the importance of ongoing retention strategies.
- Regular monitoring of this metric will help HR track progress over time and assess the impact of any new retention initiatives.

# How many employees have a performance score of 5.0 / below 3.5?

## Insight: Employees by Performance Score

- Only **1 employee** achieved a top performance score of **5.0**, indicating a rare instance of exceptional performance.
- In contrast, **12 employees** have a performance score **below 3.5**, highlighting a significant group that may benefit from additional training, support, or performance management.
- These findings suggest that strengthening performance improvement programs and recognizing high performers could boost overall productivity and morale.

```
--How many employees have a performance score of 5.0 / below 3.5?  
  
WITH latest_performance AS (  
    SELECT DISTINCT ON (employee_id)  
        employee_id,  
        performance_score  
    FROM performance  
    ORDER BY employee_id, performance_date DESC  
)  
SELECT  
    SUM(CASE WHEN performance_score = 5.0 THEN 1 ELSE 0 END) AS score_5_count,  
    SUM(CASE WHEN performance_score < 3.5 THEN 1 ELSE 0 END) AS below_3_5_count  
FROM latest_performance;
```

	score_5_count bigint	below_3_5_count bigint
1	1	12

# Which department has the most employees with a performance of 5.0 / below 3.5?

## Insight: Departmental Performance Distribution

- Marketing** is the only department with a top performer (1 employee with a score of 5.0) and also has **3 employees** scoring below 3.5.
- Engineering** has the highest number of low performers, with **6 employees** scoring below 3.5 and no top performers, suggesting an urgent need for targeted improvement in this team.
- HR** and **Sales** each have **2 and 1 low performers**, respectively, and no high performers.
- These results highlight the importance of performance management in Engineering and ongoing support across all departments to raise overall standards.

```
--Which department has the most employees with a performance of 5.0 / below 3.5?

WITH latest_performance AS (
    SELECT DISTINCT ON (employee_id)
        employee_id,
        performance_score,
        department_id
    FROM performance
    ORDER BY employee_id, performance_date DESC
)
SELECT
    d.department_name,
    SUM(CASE WHEN lp.performance_score = 5.0 THEN 1 ELSE 0 END) AS score_5_count,
    SUM(CASE WHEN lp.performance_score < 3.5 THEN 1 ELSE 0 END) AS below_3_5_count
FROM latest_performance lp
JOIN department d ON lp.department_id = d.department_id
GROUP BY d.department_name
ORDER BY score_5_count DESC, below_3_5_count DESC;
```

	department_name character varying (30) 🔒	score_5_count bigint 🔒	below_3_5_count bigint 🔒
1	Marketing	1	3
2	Engineering	0	6
3	HR	0	2
4	Sales	0	1



## What is the average performance score by department?

### Insight: Average Performance Score by Department

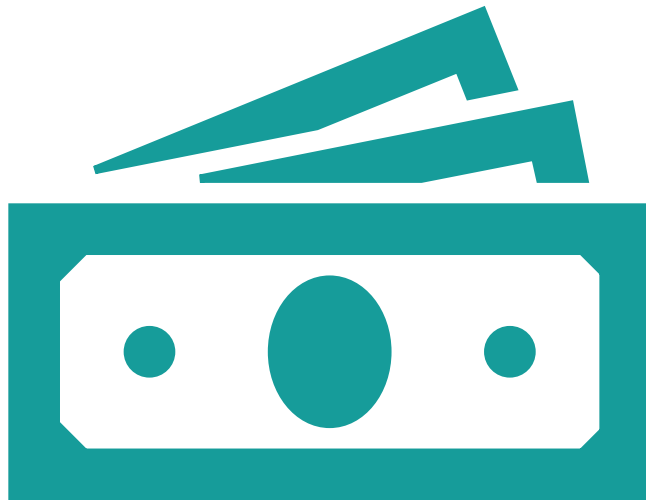
- **Marketing** leads with the highest average performance score of **4.26**, indicating a strong, high-performing team.
- **Engineering** follows at **4.10**, showing solid results but with room for improvement – especially given the number of low performers.
- **Sales** and **HR** have average scores of **4.06** and **4.00** respectively, suggesting these departments may benefit from additional training or performance support initiatives.
- Benchmarking these scores helps set expectations and focus development efforts where they can have the greatest impact.

--What is the average performance score by department?

```
WITH latest_performance AS (  
    SELECT DISTINCT ON (employee_id)  
        employee_id,  
        performance_score,  
        department_id  
    FROM performance  
    ORDER BY employee_id, performance_date DESC  
)  
SELECT  
    d.department_name,  
    ROUND(AVG(lp.performance_score), 2) AS avg_performance_score  
FROM latest_performance lp  
JOIN department d ON lp.department_id = d.department_id  
GROUP BY d.department_name  
ORDER BY avg_performance_score DESC;
```

	department_name 	avg_performance_score 
	character varying (30)	numeric
1	Marketing	4.26
2	Engineering	4.10
3	Sales	4.06
4	HR	4.00

# Salary Analysis – Insights



- **Trends & Patterns:**
  - Total salary expense for the company determined
  - Average salary by job title compared to check equity
  - Employees earning above 80,000 counted
  - Salary distribution and department-level disparities explored
  - Relationship between salary and performance mapped by department
- **Recommendations:**
  - Review and adjust compensation where inequities exist
  - Align rewards and raises with performance and benchmarks



## What is the total salary expense for the company?

### *Insight: Total Salary Expense for the Company*

- The current total salary expense for NextGen Corp is **4,850,000**.
- This figure represents the company's ongoing investment in its workforce and is a critical metric for financial planning, budgeting, and long-term sustainability.
- Monitoring total salary expense helps management ensure that payroll aligns with organizational goals and growth projections.

```
--What is the total salary expense for the company?
```

```
WITH latest_salary AS (  
    SELECT DISTINCT ON (employee_id)  
        employee_id,  
        salary_amount  
    FROM salary  
    ORDER BY employee_id, salary_date DESC  
)  
SELECT  
    SUM(salary_amount) AS total_salary_expense  
FROM latest_salary;
```

	total_salary_expense
	bigint
1	4850000

## What is the average salary by job title?

### *Insight: Average Salary by Job Title*

- **Sales Representatives** have the highest average salary at **84,285.71**, indicating the importance of this role to the company's success.
- **HR Specialists** earn an average of **81,818.18**, followed by **Engineers** and **Sales Managers** at **80,000** each.
- **Marketing Specialists** have the lowest average salary at **77,857.14**.
- This breakdown helps HR ensure pay equity across roles and may prompt a review if any positions are found to be undercompensated relative to their contribution or market benchmarks.

--What is the average salary by job title?

```
WITH latest_salary AS (  
    SELECT DISTINCT ON (employee_id)  
        employee_id,  
        salary_amount  
    FROM salary  
    ORDER BY employee_id, salary_date DESC  
)  
SELECT  
    e.job_title,  
    ROUND(AVG(ls.salary_amount), 2) AS avg_salary  
FROM latest_salary ls  
JOIN employee e ON ls.employee_id = e.employee_id  
GROUP BY e.job_title  
ORDER BY avg_salary DESC;
```

	job_title character varying (30) 🔒	avg_salary numeric 🔒
1	Sales Representative	84285.71
2	HR Specialist	81818.18
3	Engineer	80000.00
4	Sales Manager	80000.00
5	Marketing Specialist	77857.14


## How many employees earn above 80,000?

### *Insight: Employees Earning Above 80,000*

- **26 employees** at NextGen Corp currently earn more than **80,000**.
- This group represents a significant portion of the workforce and highlights the company's commitment to rewarding top talent and key roles.
- Monitoring this number helps HR understand the salary distribution and assess if compensation aligns with experience, responsibility, and performance.

```
--How many employees earn above 80,000?
```

```
WITH latest_salary AS (  
    SELECT DISTINCT ON (employee_id)  
        employee_id,  
        salary_amount  
    FROM salary  
    ORDER BY employee_id, salary_date DESC  
)  
SELECT  
    COUNT(*) AS employees_above_80k  
FROM latest_salary  
WHERE salary_amount > 80000;
```

	employees_above_80k 
1	26

# How does performance correlate with salary across departments?

- **Insight: How Does Performance Correlate with Salary Across Departments?**
- **HR** ranks **first in average salary (83,000)** but **last in average performance (score 4.00)**. This suggests that higher pay in HR is not currently translating into the highest performance and may indicate a need to better align rewards with results.
- **Marketing** leads in **average performance score (4.26)** yet is only **third in average salary (80,000)**, suggesting that top-performing employees in Marketing may be under-rewarded compared to other departments. This presents an opportunity to review and potentially adjust compensation to retain high performers.
- **Sales** is ranked **second in salary (82,857)** and **third in performance (4.06)**, showing a moderate alignment between pay and performance.
- **Engineering** is tied for **third in salary (80,000)** and is **second in performance (4.10)**, indicating reasonably good alignment between compensation and performance.
- **Key Takeaway:**
- There is **not a perfect correlation** between salary and performance across departments at NextGen Corp.
- **Actionable Recommendation:**
  - Consider aligning compensation structures more closely with performance, especially in HR (where pay is high but performance lags) and Marketing (where high performance is not yet fully recognized in compensation).

```
WITH latest_salary AS (  
    SELECT DISTINCT ON (employee_id)  
        employee_id,  
        salary_amount,  
        department_id -- typo as per your table  
    FROM salary  
    ORDER BY employee_id, salary_date DESC  
)  
latest_performance AS (  
    SELECT DISTINCT ON (employee_id)  
        employee_id,  
        performance_score,  
        department_id  
    FROM performance  
    ORDER BY employee_id, performance_date DESC  
)  
dept_stats AS (  
    --  
    SELECT  
        d.department_name,  
        ROUND(AVG(ls.salary_amount), 2) AS avg_salary,  
        ROUND(AVG(lp.performance_score), 2) AS avg_performance  
    FROM latest_salary ls  
    JOIN latest_performance lp ON ls.employee_id = lp.employee_id  
    JOIN department d ON ls.department_id = d.department_id  
    GROUP BY d.department_name  
)  
SELECT  
    department_name,  
    avg_salary,  
    avg_performance,  
    RANK() OVER (ORDER BY avg_salary DESC) AS salary_rank,  
    RANK() OVER (ORDER BY avg_performance DESC) AS performance_rank  
FROM dept_stats;
```

	department_name character varying (30)	avg_salary numeric	avg_performance numeric	salary_rank bigint	performance_rank bigint
1	HR	83000.00	4.00	1	4
2	Sales	82857.14	4.06	2	3
3	Marketing	80000.00	4.26	3	1
4	Engineering	80000.00	4.10	3	2

**Ranking Table: Salary & Performance by Department**

Rank	Department	Avg Salary	Avg Performance Score
1	Sales Rep	84,286	4.06
2	HR Specialist	81,818	4.00
3	Engineer	80,000	4.10
4	Sales Manager	80,000	(combine with Sales Rep)
5	Marketing Spec.	77,857	4.26

**Departmental Average Performance (from the earlier table):**

Rank	Department	Avg Performance Score
1	Marketing	4.26
2	Engineering	4.10
3	Sales	4.06
4	HR	4.00

## Departmental Average Salary (from the job title table):

Rank	Job Title	Avg Salary
1	Sales Representative	84,285.71
2	HR Specialist	81,818.18
3	Engineer	80,000.00
3	Sales Manager	80,000.00
5	Marketing Specialist	77,857.14

“Marketing ranks highest for both average salary and average performance score, indicating the strongest alignment between compensation and results. Engineering follows closely. HR, while offering competitive salaries, has the lowest average performance, suggesting a need to further link pay to performance in that department.”



## Conclusion:

The comprehensive analysis of employee retention, performance, and salary at NextGen Corp. has revealed crucial patterns and actionable insights that directly impact business outcomes:

- Retention Challenges:** While some employees have demonstrated long-term loyalty, high turnover rates, especially in departments like Engineering and Marketing highlight underlying issues related to work environment, job satisfaction, or career progression. The main reasons for departure include personal factors, external job opportunities, and limited career growth.

- Performance Patterns:** The workforce shows an all-round of performance, with only a small fraction achieving top scores and a notable portion underperforming. Certain departments, such as Marketing, excel in average performance but may not be adequately recognized or rewarded.

- Salary Distribution:** Compensation is not always aligned with performance. For example, the HR department leads in salary but ranks lowest in performance, while Marketing achieves the highest performance but is only mid-ranked in pay. This misalignment could risk disengagement or turnover among high performers.

- Risk and Opportunity:** Employees with low recent performance and those in high-turnover departments are at greater risk of leaving, emphasizing the need for proactive engagement and targeted support.

# Recommendations:

## 1. Strengthen Retention Strategies:

- Prioritize high-turnover departments for in-depth engagement initiatives, feedback cycles, and root cause analysis.
- Conduct exit and stay interviews to better understand employee needs and address preventable turnover.
- Develop clear career progression pathways to address “career growth” as a key reason for leaving.

## 2. Elevate Performance Management:

- Launch recognition programs for top performers, especially in departments like Marketing where high achievement is visible.
- Expand targeted coaching, mentoring, and learning opportunities for underperformers, focusing on Engineering and other identified departments.

## 3. Align Compensation with Performance:

- Review and adjust salary structures to ensure top performers are competitively compensated and feel valued.
- Benchmark compensation not only by job title but also by department and performance outcomes.
- Increase transparency in pay practices to build trust and fairness.

## 4. Foster a Culture of Success:

- Promote internal mobility, skills development, and cross-functional collaboration to keep employees engaged and growing within the company.
- Regularly monitor key HR analytics – turnover rates, performance distribution, and pay equity and adjust strategies as needed.
- Empower managers with actionable data insights so they can lead their teams more effectively.



# Conclusion & Recommendations

- **Summary:**

- Key HR patterns in retention, performance, and salary identified
- Data-driven actions proposed for engagement, recognition, and compensation

- **Recommendations for HR:**

- Prioritize high-turnover departments for engagement programs
- Support continuous feedback, recognition, and employee development
- Regularly review salary structures to maintain fairness and competitiveness

# Thank You



**Questions?**