# IT Ticket Analysis

For Year 2016-2020)

Vinay Verma

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# Introduction

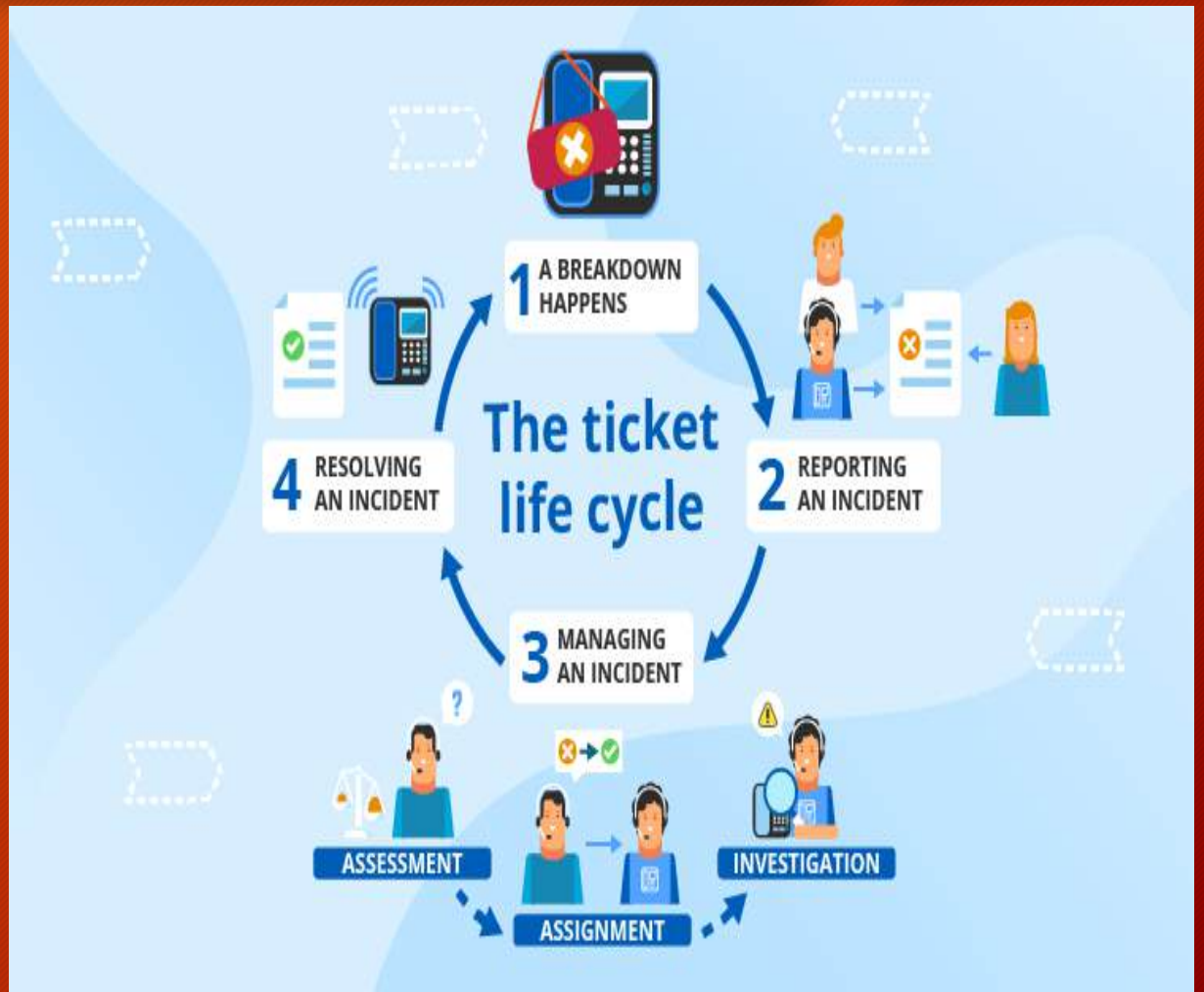
**This presentation provides a detailed analysis of IT support tickets logged between 2016 and 2020, highlighting trends in ticket volume, resolution efficiency, and key issues across departments.**

# What is an IT Ticket?

- **An IT ticket is a record or document used by an IT support system to track and manage a specific issue, request, or task related to technology services.**
- **IT tickets are typically generated when a user encounters a problem or has a request that needs to be resolved by the IT department.**

# How Ticket System Works?

- The IT ticket life cycle refers to the stages an IT support ticket goes through from the moment it is created until it is resolved or closed.
- Understanding the life cycle helps IT teams manage and resolve issues effectively.
- For an organization to work efficiently, it is most important that its Hardware and software's are in great condition for the productivity to Increase.
- Which makes this analysis really important for our organization .



# Problem Statement

**The IT support team of a company handles numerous service tickets on a daily basis. These tickets represent different types of issues such as hardware failures, software, network outages, system and login access requests. The IT team needs an analytical solution to improve the efficiency of their ticket resolution process and gain insights into the nature and trends of the tickets they receive.**

- IT Department seeks a comprehensive IT ticket analysis system that addresses the following key questions:

**Ticket Categorization and Volume**: What are the most common types of IT tickets? How does the volume of tickets change over time (e.g., daily, weekly, monthly)?
**Resolution Time**: What is the average time taken to resolve tickets across different categories? Are there categories of tickets that consistently take longer to resolve?
**Priority and Impact Analysis**: How do ticket priorities (e.g., high, medium, low) correlate with resolution times? Are high-priority tickets being addressed promptly?
**Workload Distribution**: How are tickets distributed among IT team members? Are certain team members over- or under-burdened with tickets?
**Customer Satisfaction**: What is the average customer satisfaction rating post-resolution, and how does it vary by ticket type or resolution time?
**Key Insights**
**Recommendation**
**Conclusion**

# Objectives

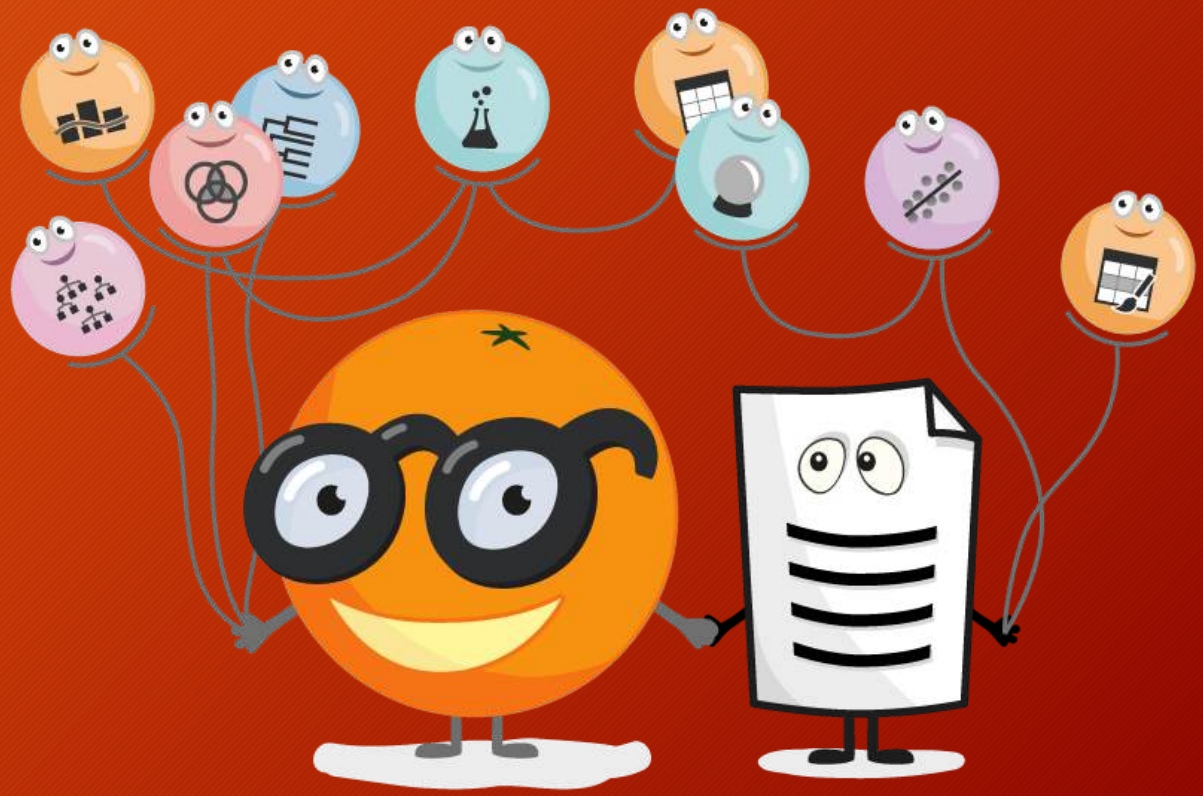
**Develop an analytical system or dashboard to monitor and improve ticket resolution efficiency by:**

- **Categorizing and tracking ticket volumes.**
- **Identifying trends in ticket resolution time.**
- **Analyzing workload distribution among team members.**
- **Examining factors that affect customer satisfaction and ticket resolution time.**
- **Recommendation for Improving Process.**

“Let’s dive into the dataset and understand the scope of our IT ticket analysis. What key aspects of our ticket data stand out to you?

# Data Overview

- **Ticket Volume:**
- **Total tickets logged: 97000+**
- **Time period covered:2016 To 2020.**
- **Key Fields-Ticket ID,Date,Issue Type, Request Category, Severity Type, Priority Type, Resolution Time, Satisfaction Rate, Agent Name, Agent Email, Agent D.O.B,Agent ID etc.**



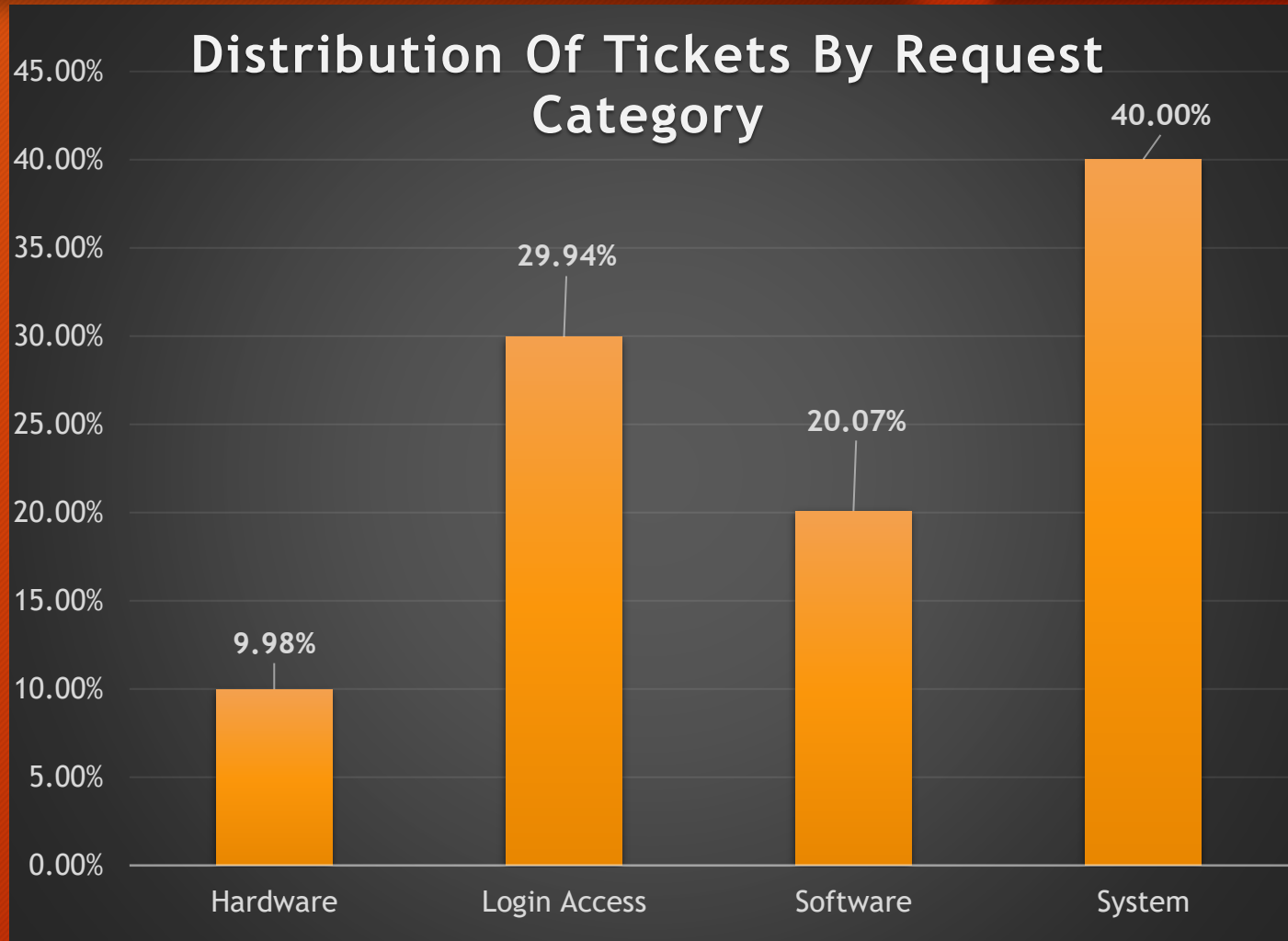
# Data Cleaning and Preparation

- After removing Inconsistencies key from Column Severity and priority are separated using Text To Column feature.
- Using VLOOKUP Agent names are matched in a new column.
- In agent sheet age is calculated by CONCATINATION and DATEDIF functions.
- Domain name separated from email id using ‘Find, Right and Length’ functions.

# Ticket Categorization

Breakdown of common ticket categories:

- Hardware Issues: e.g., computer failures, printer malfunctions.
- Software Issues: e.g., software bugs, application errors.
- Login Access Requests: e.g., password resets, permission requests.
- System: System performance Issues.



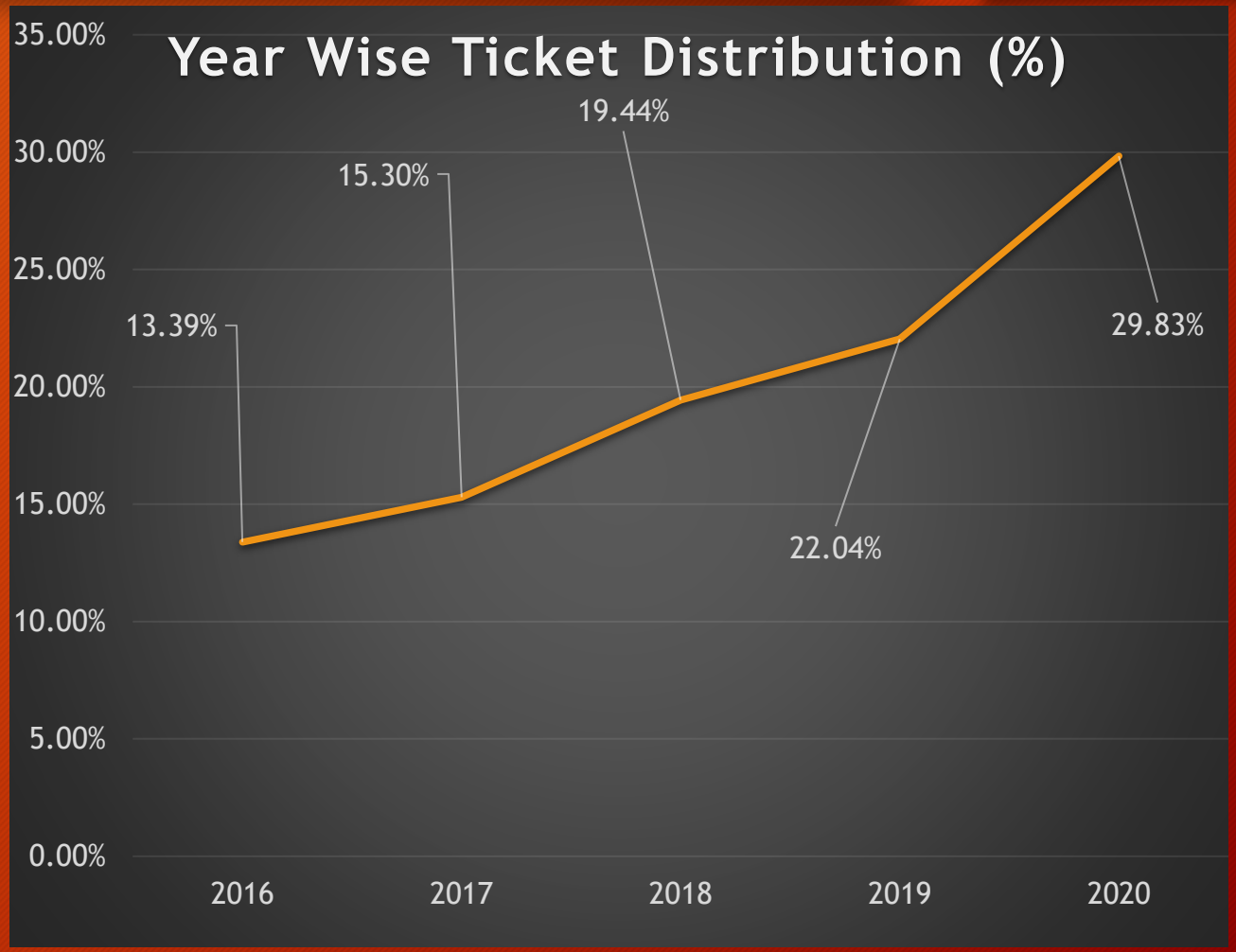
“What do you notice about the distribution of tickets across different categories? Are there categories that stand out as particularly high or low?” Based on the categorization, what are some key areas where we might need additional resources or training?

# Key Insights

- **System Issues** dominate at 40%, indicating significant performance or downtime concerns affecting users.
- **Login Access** is second with 29.94%, suggesting frequent issues related to password resets or access permissions.
- **Software Issues** represent 20.07%, likely due to bugs or errors in applications.
- **Hardware Issues** are the least frequent at 9.98%, possibly reflecting less frequent hardware failures or better maintenance.

# Ticket Volume Trends

- The percentage of ID tickets has consistently risen, with a notable jump in 2020.
- This upward trend could indicate a growing need for ticket management or an increase in issues requiring attention.
- The sharp rise in 2020 might be linked to specific events or changes, such as remote work or system updates, warranting further investigation into the cause.

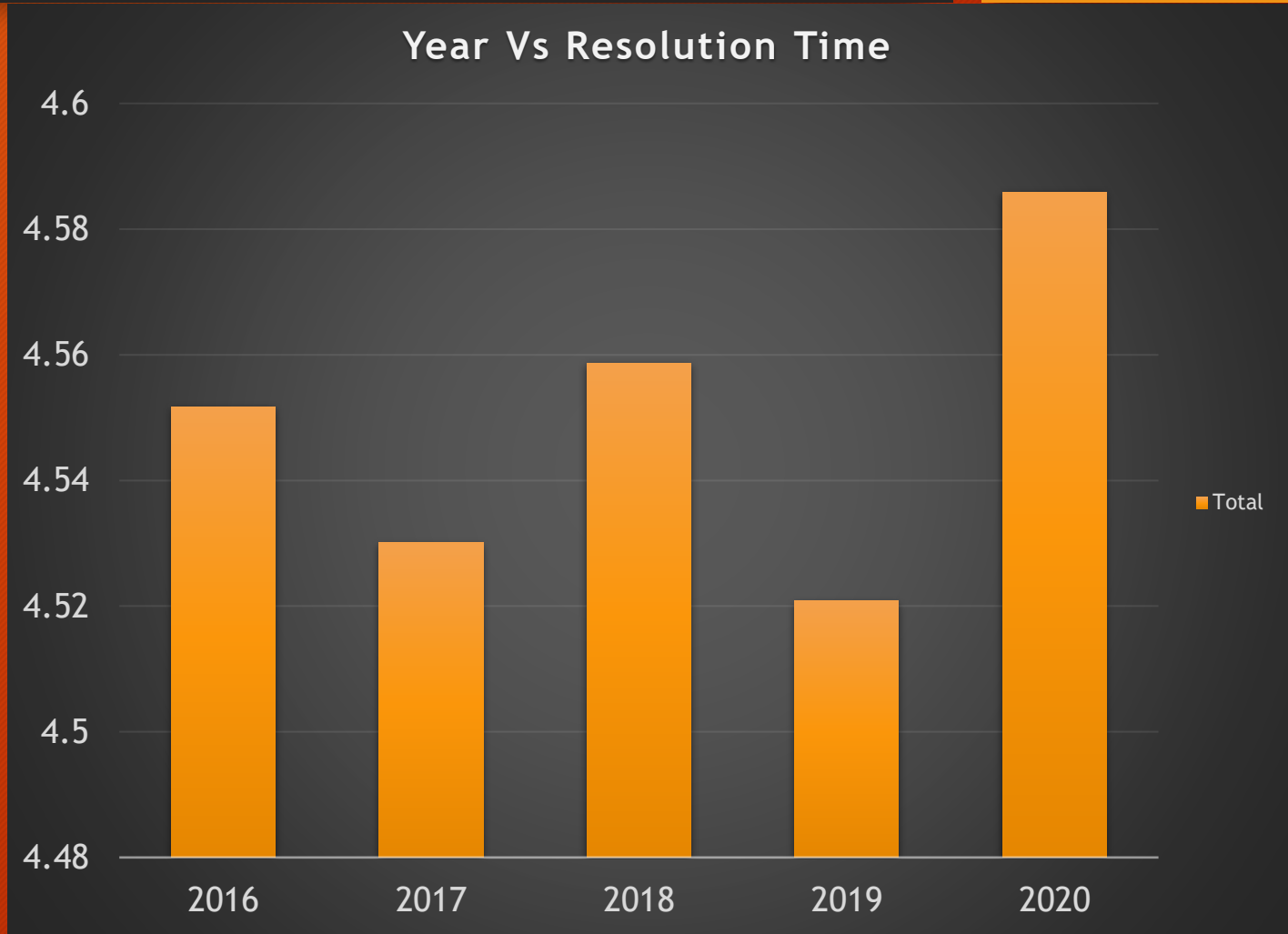


“We’ve tracked ticket volumes over time. What trends or anomalies do you see in the data?”

“How do these trends correlate with known events or changes in our IT infrastructure?”

# Resolution Time Analysis

- The resolution time remains relatively stable, with a slight increase in 2020. This could indicate a need to review processes or resource allocation to maintain efficiency, especially as ticket counts rise.



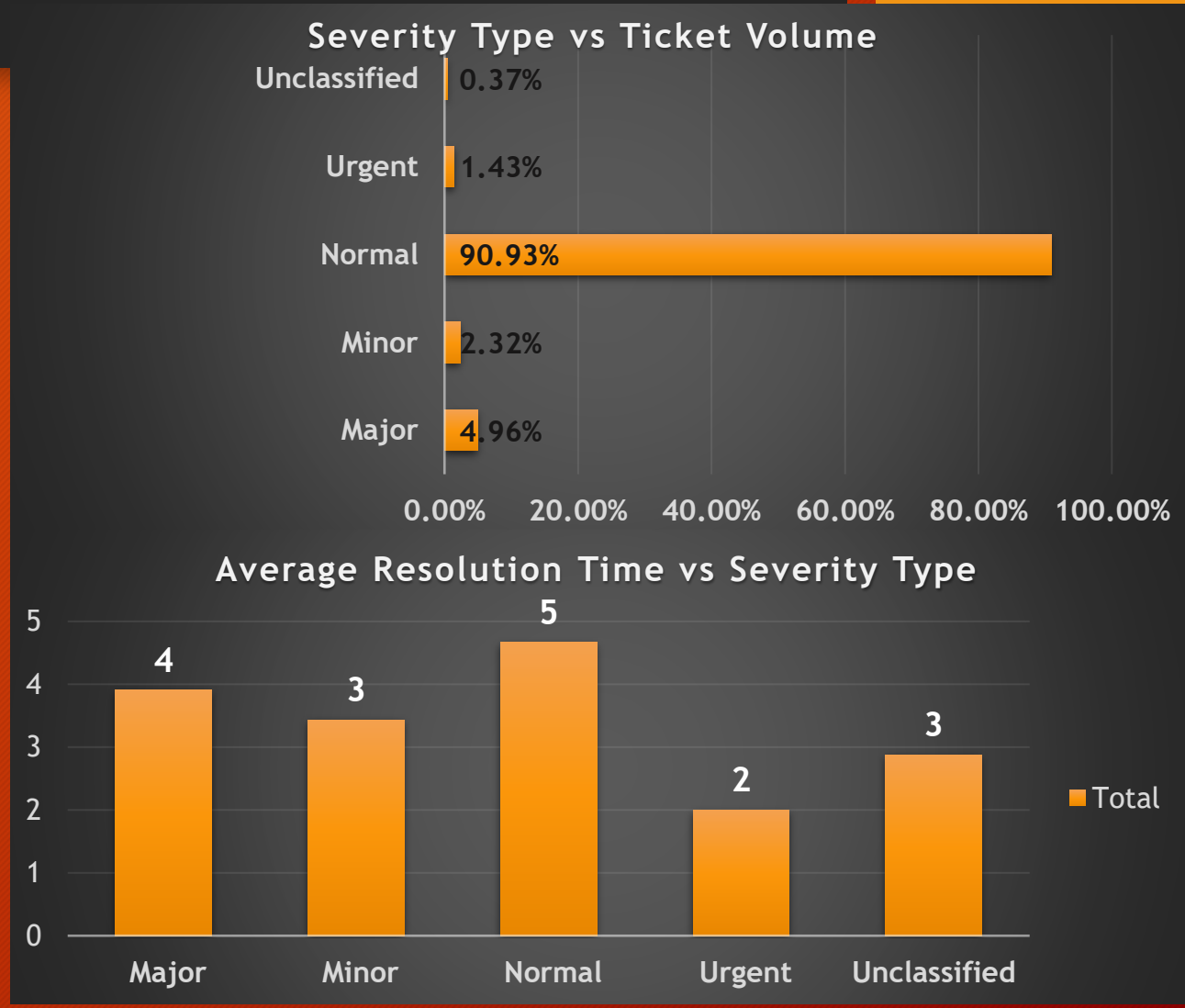
“This slide illustrates the average resolution time by ticket type. Are there any insights that could help improve our response times?”

“Do you have any suggestions for reducing resolution times based on the data presented?”

# Severity Vs Resolution Time

- **On the basis of Severity Of Issues ,Issues are classified as:**
- **Urgent issues** are resolved the fastest, averaging 2 days.
- **Minor and Unclassified** issues have an average resolution time of 3 days.
- **Major issues** take longer, averaging 4 days.
- **Normal** issues have the longest resolution time, at 5 days.

- **This suggests that more critical issues (Urgent) are prioritized and resolved quickly, while standard and major issues take longer, potentially indicating areas for process improvement in handling less critical but still significant issues.**

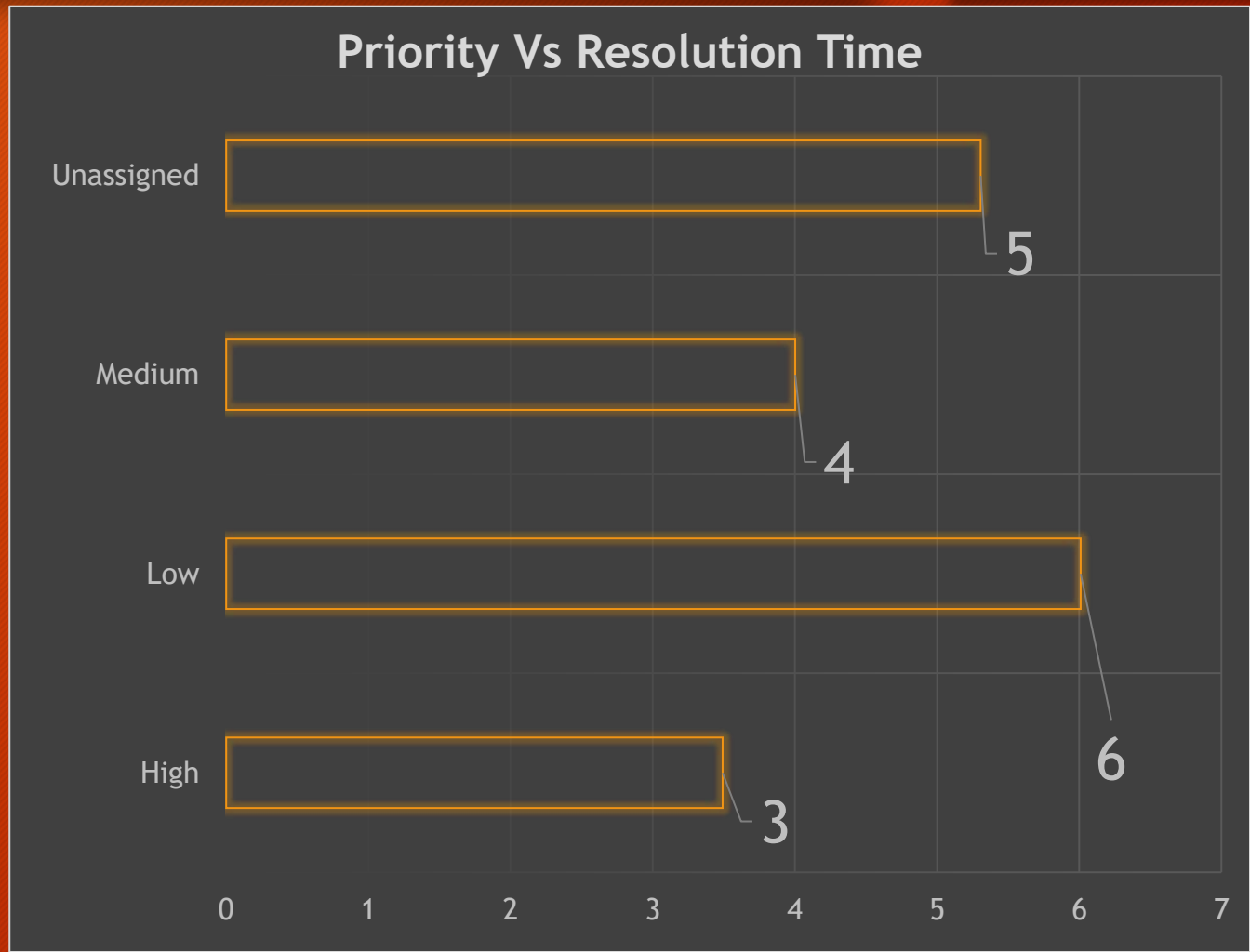


“Here’s how ticket severity affects resolution times. Do you think our current severity system is effective?”

“How should we adjust our approach to high-severity tickets to enhance efficiency?”

# Priority Vs Resolution Time

- **High** priority issues are resolved the quickest, averaging 3 days.
- **Medium** priority issues follow at 4 days.
- **Unassigned** issues have an average resolution time of 5 days, indicating they might not be prioritized promptly.
- **Low** priority issues take the longest to resolve, averaging 6 days.
- **This indicates that more urgent issues are handled faster, while lower priority and unassigned issues experience longer resolution times. Ensuring unassigned issues are promptly categorized and addressing low-priority issues more efficiently could help streamline overall resolution processes.**



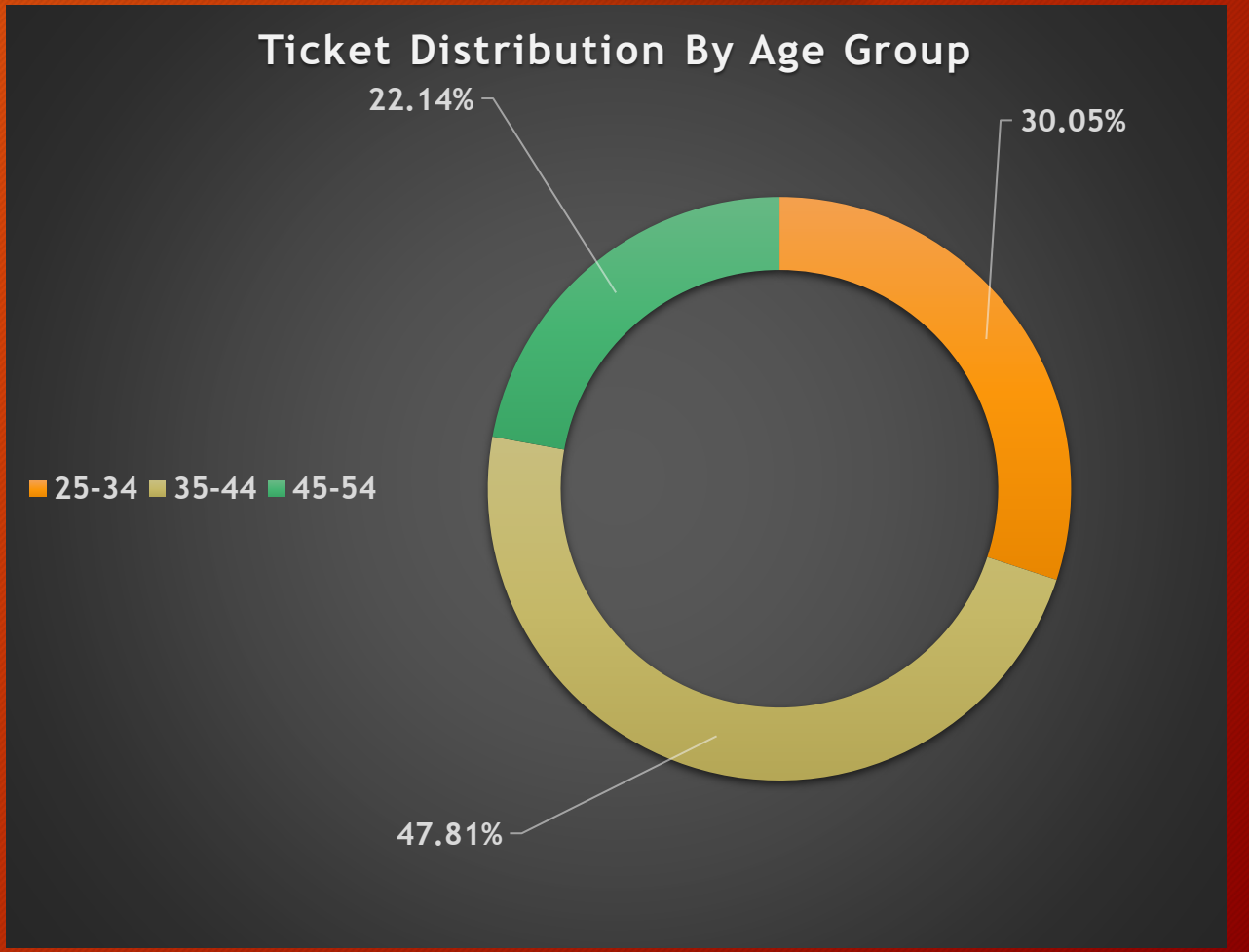
“This slide shows how different ticket priorities impact resolution times. What trends or patterns do you observe here?”

“Consider the following: Do you think our current prioritization system effectively addresses high-priority issues in a timely manner? Why or why not? Share your thoughts or experiences where priority might have influenced resolution time.”

“Let’s explore how tickets are distributed among our IT staff. Does this distribution look balanced to you?”

# Workload Distribution

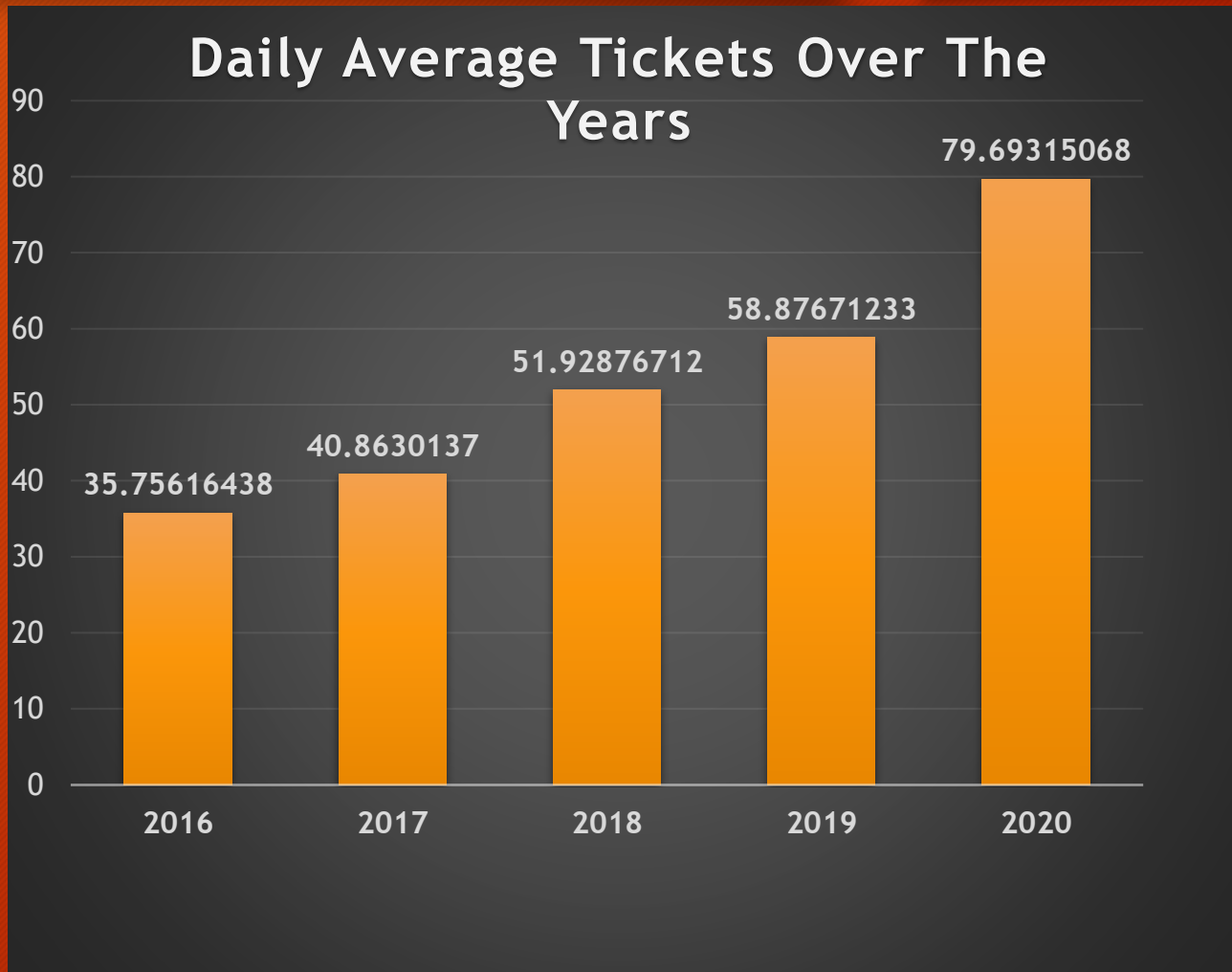
- 35-44 years is the largest age group, handling nearly half of the tickets (47.81%), indicating they are the most active or experienced group in ticket management.
- 25-34 years handles a significant portion (30.05%), suggesting a strong contribution from a younger, possibly more tech-savvy demographic.
- 45-54 years handles the least amount (22.14%), which might reflect either a smaller representation in the team or different roles compared to younger groups.



“What changes would you suggest to ensure an even distribution of workload?”

# Daily Average Tickets Analysis

- The number of tickets handled daily has steadily increased each year.
- The most significant rise occurs from 2019 to 2020, with an increase of nearly 21 tickets per day.
- This trend suggests growing demand or volume of issues needing resolution, potentially due to organizational changes or increased user needs.

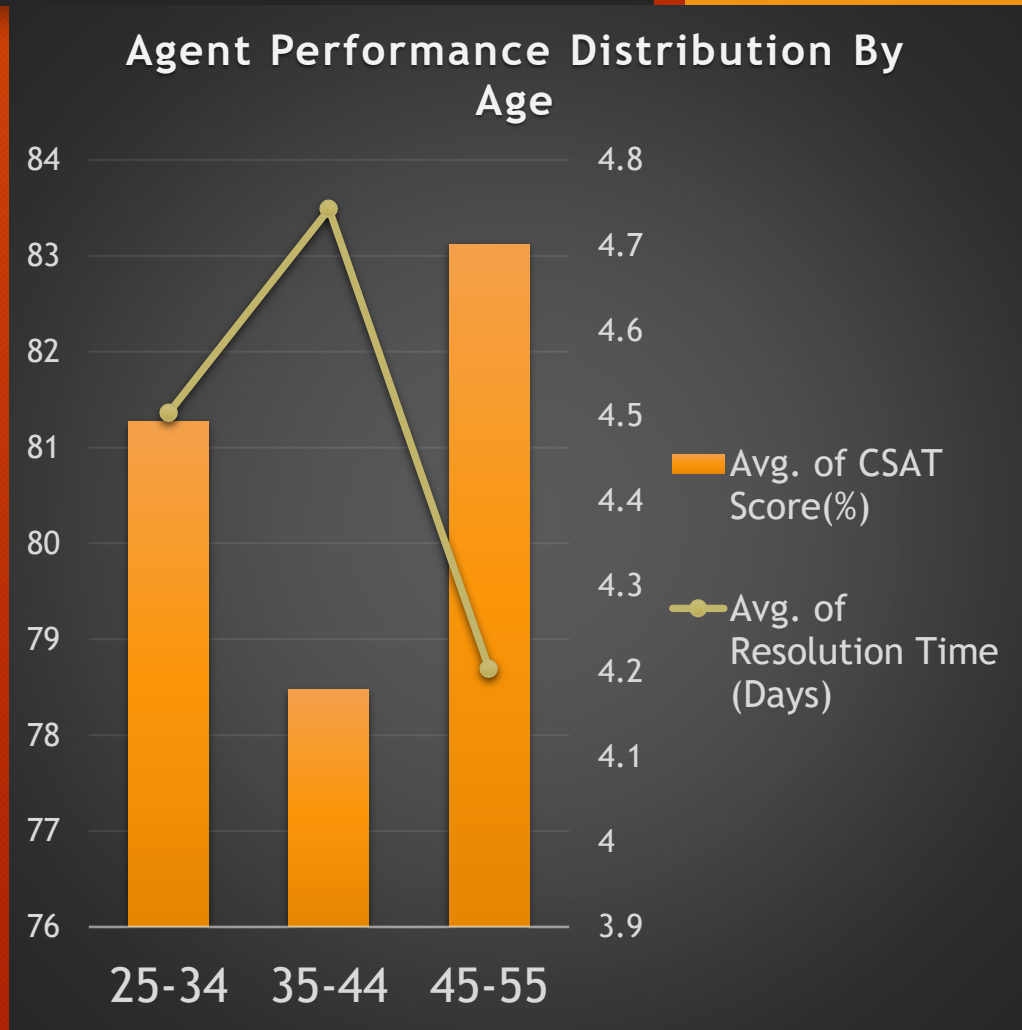


“Here we examined the daily average ticket volume over the analysis period. This helps us understand typical daily workloads and identify any patterns or fluctuations.”

# Age of Agents and Performance

We can analyze workload distribution on the basis of age groups of Agents as:

- For Age Group 25-34:Agents in this group perform reasonably well in terms of CSAT scores, but their resolution time is slightly above average compared to the 45-55 age group. They might benefit from more time-saving tools or process improvements.
- Age Group 35-44:This group has the lowest CSAT score and the longest resolution time. These agents may require targeted training to improve their efficiency and customer satisfaction, or perhaps some support with workflow management or technology tools to reduce resolution times.



- **<u>Age Group 45-55:</u>This group has the highest CSAT score and the fastest resolution time. They are performing the best overall, suggesting they might be the most experienced or efficient group. Their performance could serve as a benchmark for the other groups.**

“How might experience level, which often correlates with age, impact an agent’s performance? Do you think additional training or support could benefit different age groups differently?”

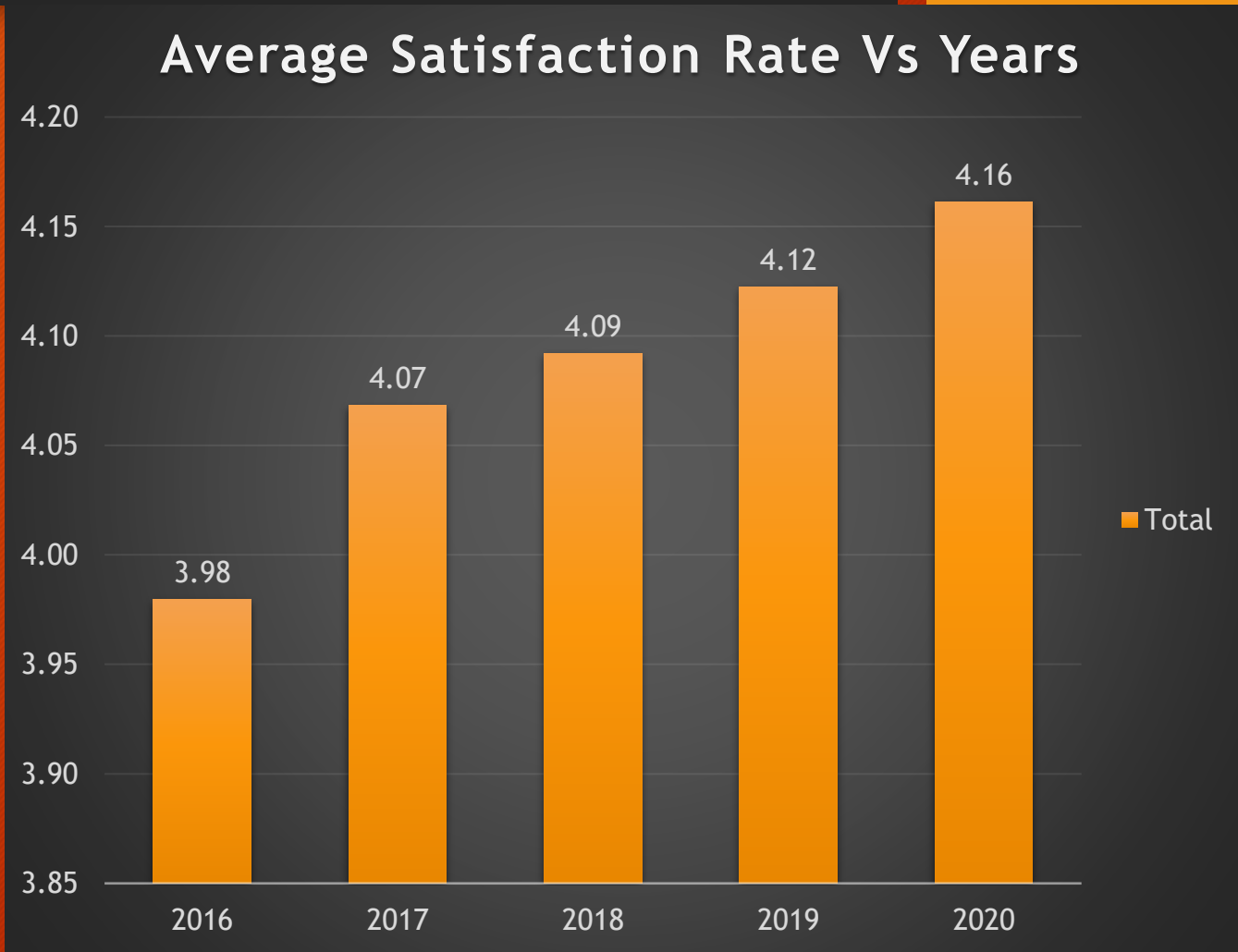
# Customer Satisfaction vs Resolution Time

- 3-4 days resolution time yields the highest CSAT score at 82.82%, indicating the highest customer satisfaction when issues are resolved within this timeframe.
- 4-5 days sees a slight decrease in satisfaction to 78.94%, suggesting a moderate drop in customer contentment with longer resolution times.
- More than 5 days results in an average CSAT score of 80.43%, which is slightly lower than the 3-4 days range but higher than the 4-5 days range.

“How can we use this data to improve our support process? Are there specific strategies we can implement to balance resolution speed with the quality of the solution provided?”

# Customer Satisfaction Over Time

- The satisfaction rate has shown a consistent upward trend, improving each year.
- The increase is gradual but steady, with the highest rate of 4.16 in 2020.
- This trend indicates ongoing improvements in customer satisfaction, suggesting that efforts to enhance service quality or address customer concerns are having a positive impact.
- Overall, the data reflects a positive trajectory in customer satisfaction, with incremental gains each year, culminating in the highest average satisfaction rate in 2020.



“Can you identify any events, changes, or actions that might have influenced these fluctuations in satisfaction? How do you think these factors impacted our overall customer experience?”

# Key Insights

- **Hardware issues and system issues have the longest resolution time ,Login Issues have lowest resolution time.**
- **Agents with low satisfaction ratings and long resolution times may require additional training, support, or tools to improve their performance.**
- **Age Group 35-44,This group has the lowest CSAT score and the longest resolution time. These agents may require targeted training to improve their efficiency and customer satisfaction, or perhaps some support with workflow management or technology tools to reduce resolution times.**

- Certain issues like Hardware and System Issues have longer resolution time ,which might be due to Outdated Systems., If this is addressed then IT team can work more efficiently i.e. it will reduce the average resolution time and Increase satisfaction rate.

- Average of resolution time is not showing a significant change over the time, and this can be further reduced or improve.

- As observed daily ticket volume over the years Is Increasing with an overall daily average of tickets is 53.

- IT Error type of issues are 25% and IT request is 75%.

- Average resolution time of team is 5 Days(Rounded off).

- On the basis of severity of cases Urgent cases have average resolution time of 2 Days.

“Based on our findings, Next are some recommended strategies for optimizing ticket management. Which recommendations do you think will have the biggest impact?”

- **Recommendations:**

- **Dedicated Support Teams: We can consider forming specialized teams or designating agents with expertise in hardware and system issues. This can lead to more efficient problem-solving and reduced resolution times.**

- **Enhance Tools: We have to ensure that agents have access to advanced diagnostic tools and resources that can help speed up the resolution of hardware and system issues.**

- **Ticket Distribution: We should consider redistributing tickets more evenly across the age groups. The 45-54 group could take on more tickets since they handle them quickly and with high satisfaction, while the 35-44 group could benefit from a reduced load to improve their performance**

- **Automation: We can implement automation where possible to handle routine tasks related to hardware and system issues, freeing up agents to focus on more complex problems.**
- **Performance Benchmarking: We can review ART targets for software issues to ensure they are achievable. If current targets are consistently met, consider setting more challenging goals to drive further improvement.**
- **Hiring: As volume of tickets is increasing yearly, so we should hire more agents.**

“What immediate steps should we take to implement the recommendations?”

# Dashboard Snapshot