

# IT Ticket analysis

By Tina Kapse.

### Subjective Questions

1. If there is an investment, should it be used to hire more IT agents, improve training programs, or upgrade ticket management software?

Analysis: Perform a cost-benefit analysis using ticket resolution and satisfaction metrics.

Ans:

#### ❖ Approach

1. Calculate the performance metrics for each individual over a 5-year period (2016-2020).
2. Calculate the year-on-year growth of tickets, along with the average resolution time and satisfaction rate.
3. To determine whether software and system upgrades are necessary, calculate the performance metrics for each request category in relation to their average resolution time and satisfaction rate.

#### ❖ Key Insights

- **Overall Trends:** Resolution time remained stable at 4.5–4.6 days despite ticket volume doubling from 13,051 (2016) to 29,088 (2020). Satisfaction slightly improved from 4.0 to 4.2.
- **Agent Performance:** Top agents (e.g., Agents 2, 8, 15, 17) have low resolution times (3.6–3.8 days) and high satisfaction (4.3–4.5), while underperformers (Agents 19, 22, 3) lag behind with higher resolution times (5.0–5.5 days) and lower satisfaction (3.0–3.6).
- **Ticket Volume vs. Performance:** Increased ticket volumes strain the team, impacting resolution times and service quality.

#### ❖ Conclusion

Ticket volume growth is creating pressure, with stable resolution times and modest satisfaction improvement indicating resilience. Performance varies significantly

among agents, with underperformers needing intervention. Satisfaction trends suggest users value quality resolutions despite time delays.

### ❖ Recommendations

- **Training:** Target underperformers with training and promote best practices via knowledge-sharing from top agents.
- **Software:** Upgrade ticket management systems to streamline workflows and reduce resolution times through automation.
- **Staffing:** Hire additional agents to manage rising ticket volumes and alleviate workload stress.
- **Performance Tracking:** Regularly monitor metrics like resolution time and satisfaction to identify trends and encourage improvement.

2. Which agents need additional training based on their performance metrics?

Analysis: Identify agents with the lowest satisfaction ratings and longest resolution times.

Ans:

### ❖ Approach

The analysis identified agents needing training based on:

- **Key Metrics:** High resolution times and satisfaction scores below 4.0 indicate inefficiency and poor user experience.
- **Performance Thresholds:** Target resolution time is 4.6 days, with satisfaction scores above 4.0.
- **Segmentation:** Agents with both high-resolution times and low satisfaction were prioritized.

### ❖ Insights

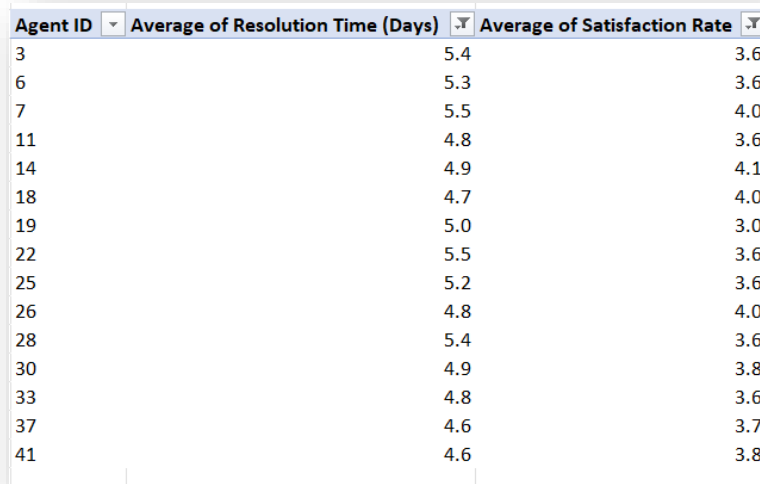
Agents 19, 3, 6, 7, 22, 25, and 28 need targeted training to address high resolution times and low satisfaction scores, with Agent 19 requiring urgent intervention. High-performing agents like 14, 18, 26, 30, and 41 can act as mentors to foster best practices, while process reviews and performance incentives can drive overall improvement.

## ❖ Conclusion

Agents 19, 3, 6, 7, 22, 25, and 28 require targeted training to improve performance, with Agent 19 needing the most attention. Agents 14, 18, 26, 30, and 41 demonstrate consistent excellence and can serve as mentors.

## ❖ Recommendations

- **Training:** Conduct technical skill sessions and customer service workshops to address long resolution times and low satisfaction scores.
- **Monitoring:** Regularly track agent performance and provide feedback to address weaknesses promptly.
- **Mentorship:** Pair underperforming agents with high-performing peers to share best practices.
- **Process Review:** Evaluate tools and workflows used by underperformers to identify and remove bottlenecks.
- **Incentives:** Recognize and reward agents who make significant performance improvements to encourage growth.



Agent ID	Average of Resolution Time (Days)	Average of Satisfaction Rate
3	5.4	3.6
6	5.3	3.6
7	5.5	4.0
11	4.8	3.6
14	4.9	4.1
18	4.7	4.0
19	5.0	3.0
22	5.5	3.6
25	5.2	3.6
26	4.8	4.0
28	5.4	3.6
30	4.9	3.8
33	4.8	3.6
37	4.6	3.7
41	4.6	3.8

3. Do certain categories of requests have longer resolution times?

Analysis: Analyze the resolution times by request category.

Ans:

### ❖ Approach

The analysis examines resolution times across request categories to identify inefficiencies and their impact on IT support performance. Steps included segmenting categories, comparing resolution times, assessing impacts, and proposing strategies for improvement.

### ❖ Insights

- **Longest Resolution Times:** Hardware (7.6 days) and System (6.6 days) face delays due to diagnostic challenges, resource limitations, and dependencies.
- **Moderate Resolution Time:** Software requests (5.2 days) exceed the overall average of 4.6 days due to inefficiencies like bugs and compatibility issues.
- **Fastest Resolution Time:** Login Access (0.3 days) achieves excellent efficiency through straightforward processes or automation.
- **Overall Impact:** Categories like Hardware and System significantly increase the average resolution time, impacting overall efficiency and satisfaction.

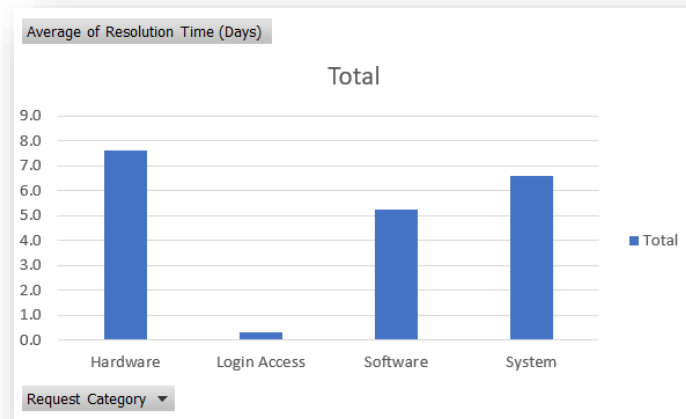
### ❖ Conclusion

Hardware (7.6 days) and System (6.6 days) have notably higher resolution times, while Software (5.2 days) also requires optimization. Prolonged resolution in these categories can delay responses, create backlogs, and reduce satisfaction, despite Login Access being highly efficient.

### ❖ Recommendations

- **Specialized Tools and Automation:** Invest in diagnostic tools and vendor partnerships for Hardware, and AI-powered monitoring for System issues.
- **Optimize Software Handling:** Train agents, enhance access to developers, and leverage knowledge bases for common issues.
- **Performance Monitoring:** Set category-specific targets and track trends to address recurring bottlenecks.
- **Adopt Best Practices:** Apply the efficiencies of Login Access processes to other categories where feasible.
- **Workload Distribution:** Dedicate specialized teams to Hardware and System categories to improve resolution efficiency.

Implementing these steps can streamline complex ticket handling, reduce resolution times, and boost overall satisfaction.



4. How effective are the current software tools in managing IT tickets?

Analysis: Evaluate performance metrics before and after the implementation of new tools.

Ans:

#### ❖ Approach

The evaluation focused on assessing software tool effectiveness using metrics like resolution time and satisfaction rates, identifying performance variations across categories, and analyzing tool impacts on ticket management and complexity.

#### ❖ Insights

- **Resolution Times:** Login Access is resolved efficiently (0.3 days), while Software (5.2 days), System (6.6 days), and Hardware (7.6 days) show significant delays.
- **Satisfaction Rates:** A consistent 4.1 across categories reflects acceptable but not exceptional satisfaction, with user expectations adjusted for complex issues.

- **Performance Gaps:** Tools effectively handle simple tickets but struggle with complex requests, highlighting inefficiencies in Hardware and System categories.

## Conclusion

While current tools excel at managing straightforward issues, they face challenges with complex categories like Hardware and System tickets. Consistent satisfaction rates suggest users adapt to delays, but inefficiencies in processes and resource allocation impact overall performance.

## ❖ Recommendations

- **Specialized Tools:** Upgrade tools for Hardware and System tickets, incorporating AI diagnostics to streamline processes and reduce delays.
- **Software Optimization:** Foster collaboration with software teams and provide targeted training to improve ticket resolution efficiency.
- **Enhance Satisfaction:** Conduct user surveys and focus on quicker initial responses to improve the overall user experience.
- **Automation and Self-Service:** Expand self-service portals and automate repetitive tasks like diagnostics to free up resources for complex issues.
- **Performance Monitoring:** Set specific targets by category, continuously track metrics, and refine tools and processes to ensure sustained improvements.

These steps can enhance tool performance, reduce resolution times, and improve satisfaction, particularly for high-impact categories.

Request Category ▾	Average of Resolution Time (Days)	Average of Satisfaction Rate
Hardware	7.6	4.1
Login Access	0.3	4.1
Software	5.2	4.1
System	6.6	4.1
<b>Grand Total</b>	<b>4.6</b>	<b>4.1</b>

5. How has the performance of the IT support team changed over time (e.g., monthly or quarterly)?

Ans:

### ❖ Approach

The trend analysis focused on quarterly resolution times and satisfaction rates from 2016 to 2020 to identify performance fluctuations, patterns, and seasonal impacts. This evaluation aimed to highlight team consistency, pinpoint challenges, and provide actionable strategies.

### ❖ Insights

- **Resolution Times:** Resolution times remained steady at 4.5–4.6 days, with only minor fluctuations like a peak in Q2 2018 (4.7 days), likely due to increased workload or inefficiencies.
- **Satisfaction Rates:** Satisfaction improved slightly from 4.0 in 2016 to 4.2 in 2020, reflecting better service quality despite consistent resolution times.
- **Correlations:** Improved satisfaction despite stable resolution times suggests effective communication and service quality. Fluctuations in certain quarters, like Q2 2018, may relate to seasonal workload increases.

### ❖ Conclusion

Resolution times have remained stable, indicating consistent performance, though improvement may require additional resources or tools.

Satisfaction rates show gradual improvement, demonstrating employee satisfaction with the service. Peaks in Q2 2018 highlight potential impacts from seasonal factors like ticket volume spikes.

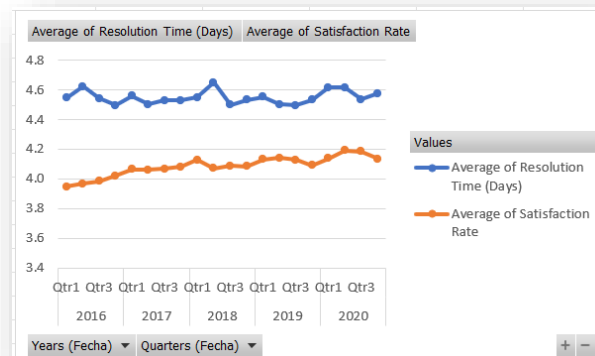
### ❖ Recommendations

- **Efficiency During Peaks:** Investigate and address causes of increased resolution times in high-volume quarters, such as by adding staff or enhancing tools during busy periods.
- **Targeted Training:** Provide training to improve efficiency, focusing on managing increased ticket volumes and addressing seasonal variations effectively.
- **System Upgrades:** Upgrade ticket management systems to streamline workflows, reduce resolution times, and handle growing demand.



- **Satisfaction Monitoring:** Maintain quarterly feedback sessions or surveys to ensure continuous satisfaction improvement and identify emerging concerns early.

Implementing these recommendations can sustain performance levels while enhancing service quality and addressing increasing workloads.



6. If we invest more on tech (Hardware, software, etc), do you think it will improve the ticket resolution times and employee satisfaction?

Analysis: Use historical data to project potential improvements.

Ans:

#### ❖ Approach

- **Historical Analysis:** Analyzed resolution times and satisfaction rates across categories to identify trends and inefficiencies, particularly in high-impact areas.
- **Impact Projection:** Estimated potential improvements using industry benchmarks and projected reductions in resolution times through targeted investments.
- **Correlation Assessment:** Assessed the relationship between resolution times and satisfaction rates, focusing on categories with the highest delays for improvement opportunities.

#### ❖ Insights

- Resolution Times: Login Access is the most efficient category (0.3 days), while Hardware faces delays (7.6 days) due to resource or dependency issues. Software and System also have room for improvement, with averages of 5.2 and 6.6 days.
- Satisfaction Rates: Satisfaction remains steady at 4.1 despite varied resolution times, suggesting other factors like communication and resolution quality play a key role.
- Ticket Volume: System (39,002 tickets) and Login Access (29,193 tickets) dominate ticket volume, so even minor efficiency gains in these areas can significantly impact overall performance.

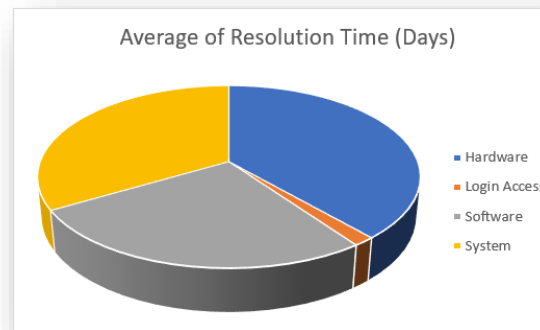
### ❖ Conclusion

Investments in technology and process optimization can reduce resolution times for categories like Hardware, Software, and System. However, improving satisfaction will also require enhancements in communication and resolution quality, as resolution time alone isn't the sole driver of satisfaction.

### ❖ Recommendations

- Prioritize High-Impact Areas: Focus resources on categories with high resolution times (Hardware and System) and automate repetitive processes like diagnostics.
- Enhance Communication: Provide regular updates to employees about ticket progress to improve their experience and satisfaction.
- Collect Feedback: Use qualitative feedback loops to identify non-time-related factors affecting satisfaction and address them effectively.
- Track Metrics: Monitor KPIs such as First Contact Resolution (FCR) and Mean Time to Resolution (MTTR) to measure ongoing improvements.
- Pilot Scalable Solutions: Test new tools or processes in smaller units before rolling them out across the organization to ensure effectiveness and scalability.

These actions can streamline resolution processes, improve satisfaction, and drive overall efficiency in IT support operations.



7. What are the key performance metrics for IT agents, and how can they be improved, do we need to fire any agents?

Analysis: Define and analyze metrics such as average handling time, satisfaction scores, and number of tickets resolved.

Ans:

#### ❖ Approach

- **Key Metrics:** Assessed agent performance using Resolution Time (efficiency), Satisfaction Rate (service quality), and Ticket Volume (workload).
- **Analysis Objectives:** Identified underperforming and excelling agents, pinpointed improvement areas, and evaluated the need for interventions such as training or replacement.
- **Data-Driven Insights:** Compared agent performance metrics to highlight outliers, inefficiencies, and correlations between resolution speed and satisfaction.

#### ❖ Insights

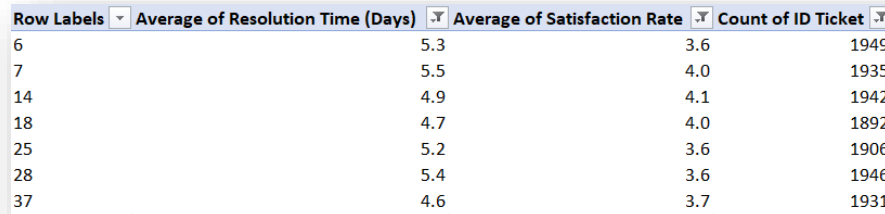
- **Resolution Times:** Agent 37 excels with the shortest resolution time (4.6 days), while Agents 6, 7, 25, and 28 (5.3–5.5 days) need improvement.
- **Satisfaction Rates:** Agent 14 has the highest satisfaction rate (4.1), while Agents 6, 25, and 28 lag behind at 3.6, reflecting user dissatisfaction.
- **Ticket Volume:** Ticket volumes are balanced (~1,900 tickets per agent), ruling out workload as a performance factor.
- **Correlations:** Lower resolution times often correlate with higher satisfaction rates, as seen with Agent 37.

### ❖ Conclusion

- Resolution time and satisfaction rate are critical performance indicators.
- Agents 6, 25, and 28 are underperforming in both metrics, negatively affecting team performance.
- Agent 37 demonstrates exceptional efficiency and effectiveness, setting a standard for best practices.

### ❖ Recommendations

- **Training & Development:** Offer targeted training for Agents 6, 25, and 28 to improve resolution efficiency and user interactions, focusing on soft skills and technical expertise.
- **Performance Monitoring:** Regularly review agents' metrics and use dashboards for real-time tracking to address issues proactively.
- **Process Enhancements:** Adopt best practices from high performers (e.g., Agent 37) and introduce automation tools to support struggling agents.
- **Retention vs. Replacement:** Retain underperforming agents if training shows progress; otherwise, replace them after a probation period to sustain team performance.



Row Labels	Average of Resolution Time (Days)	Average of Satisfaction Rate	Count of ID Ticket
6	5.3	3.6	1949
7	5.5	4.0	1935
14	4.9	4.1	1942
18	4.7	4.0	1892
25	5.2	3.6	1906
28	5.4	3.6	1946
37	4.6	3.7	1931

8. How do employee demographics (e.g., department, seniority) impact satisfaction and ticket outcomes?

Analysis: Segment analysis using filters and pivot tables.

Ans:

### ❖ Approach

- **Segment Demographics:** Analyze satisfaction rates and resolution times across age groups to uncover trends.
- **Correlation Analysis:** Examine relationships between age groups, resolution times, and satisfaction.
- **Outcome Assessment:** Identify age groups facing longer resolution times or lower satisfaction.
- **Recommendation Framework:** Propose targeted interventions to address demographic-specific challenges.

#### ❖ Insights

- **Ticket Volume:** The 28-32 and 38-42 groups generate the most tickets (~23,000 each), while the 33-37 and 48-53 groups submit fewer (~15,500).
- **Satisfaction Rates:** The 28-32 and 48-53 groups have the highest satisfaction (4.2), while the 33-37 and 43-47 groups have lower scores (4.0).
- **Resolution Times:** The 48-53 group enjoys the fastest resolutions (4.1 days), while the 33-37 and 43-47 groups experience slower times (4.8 days).
- **Metric Correlation:** Faster resolution times correlate with higher satisfaction, as seen in the 28-32 and 48-53 groups.

#### ❖ Conclusion

- **High-Satisfaction Groups:** The 28-32 and 48-53 groups benefit from faster resolutions and effective support.
- **Low-Satisfaction Groups:** The 33-37 and 43-47 groups face slower resolutions, possibly impacting satisfaction.
- **Key Observations:** High ticket volumes in the 28-32 and 38-42 groups may require additional resources to maintain service levels.

#### ❖ Recommendations

- **Resource Allocation:** Deploy more resources or prioritize tickets from the 28-32 and 38-42 groups to reduce bottlenecks.
- **Process Improvements:** Investigate and resolve inefficiencies impacting the 33-37 and 43-47 groups, such as ticket complexity or delays.
- **Feedback Collection:** Conduct surveys with the 33-37 and 43-47 groups to understand specific satisfaction issues.
- **Proactive Support:** Provide self-service tools or workshops for high-volume groups to empower them and reduce ticket demand.
- **Monitor & Adapt:** Track satisfaction and resolution times by age group to refine strategies based on outcomes.

Age group ▾	Count of ID Ticket	Average of Satisfaction Rate	Average of Resolution Time (Days)
28-32	23483	4.2	4.4
33-37	15554	4.0	4.8
38-42	23289	4.1	4.6
43-47	19569	4.0	4.8
48-53	15603	4.2	4.1
<b>Grand Total</b>	<b>97498</b>	<b>4.1</b>	<b>4.6</b>

9. Identify the trends for IT support operations based on ticket volumes and satisfaction, and mention the peak and stable times?

Analysis: Use pivot tables and charts to identify peak and off-peak hours.

Ans:

#### ❖ Approach

To identify trends in IT support, the analysis will focus on:

- **Ticket Volumes:** Evaluate yearly and quarterly trends to spot peak times and seasonal changes.
  - **Satisfaction Rates:** Examine satisfaction trends to see how ticket volumes affect service quality.
- Goal: Identify peak and stable periods to optimize IT support operations.

#### ❖ Insights

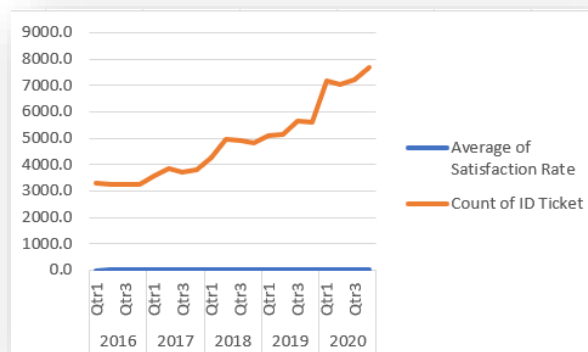
- **Ticket Volume Growth:** A steady rise in ticket volumes suggests growing demand, peaking in 2020, with a 123% increase compared to 2016.
- **Peak and Stable Times:**
  1. **Peak:** Quarters 3 and 4, particularly Q4 of 2020, saw the highest volumes (7,684 tickets).
  2. **Stable:** Quarters 1 and 2 have lower volumes, offering opportunities for proactive improvements.
- **Satisfaction Trends:** Despite rising volumes, satisfaction has slightly improved, suggesting IT support's effective adaptation.

#### ❖ Conclusion

- **Key Observations:** Ticket volumes doubled over the years, with a significant 2020 increase. Satisfaction remained steady or improved, even during peak periods.
- **Potential Risks:** Continued volume growth could strain IT operations, affecting satisfaction if not managed proactively.

#### ❖ Recommendations

- **Optimize Resource Allocation:** Increase resources during peak periods (Q3 and Q4) and use stable periods (Q1 and Q2) for training and system improvements.
- **Enhance Automation:** Implement AI-driven systems and self-service tools to manage peaks efficiently.
- **Monitor Satisfaction Rates:** Conduct surveys after high-volume periods to identify and address pain points.
- **Analyze 2020 Spike:** Investigate the 2020 spike to assess if it reflects long-term trends or temporary factors, and plan resources accordingly.
- **Proactive Measures:** Use historical data to predict and address ticket spikes and common issues.



10. What metrics should be included in the final dashboard to provide a comprehensive view of call center performance and guide investment decisions?

Ans:

#### ❖ Approach

The analysis focuses on key metrics like ticket volume, resolution time, customer satisfaction, service efficiency, and staffing. By tracking these

metrics across various filters (year, quarter, department, agent, etc.), we aim to identify trends, efficiency gaps, and areas requiring resource allocation or improvement to optimize IT support operations.

### ❖ Insights

Ticket volume has been growing steadily, with peaks in certain quarters indicating high-demand periods. Resolution times and satisfaction rates reveal that there are bottlenecks affecting efficiency, especially for specific agents or departments. Additionally, customer satisfaction varies across ticket types, indicating targeted improvement areas for service quality.

### ❖ Conclusion

Key operational areas include ticket resolution efficiency, customer satisfaction, and workload balance. Identifying trends in ticket volume and resolution time across demographics or departments provides insight into where support resources are needed most. Peak periods require targeted staffing and training to maintain service quality.

### ❖ Recommendations

Allocate resources during peak periods to ensure quicker resolution times. Invest in automation to improve efficiency and reduce costs. Use performance dashboards to monitor agents' effectiveness and satisfaction levels. Regularly analyze satisfaction feedback and workload distribution to ensure proactive improvements in service quality.

