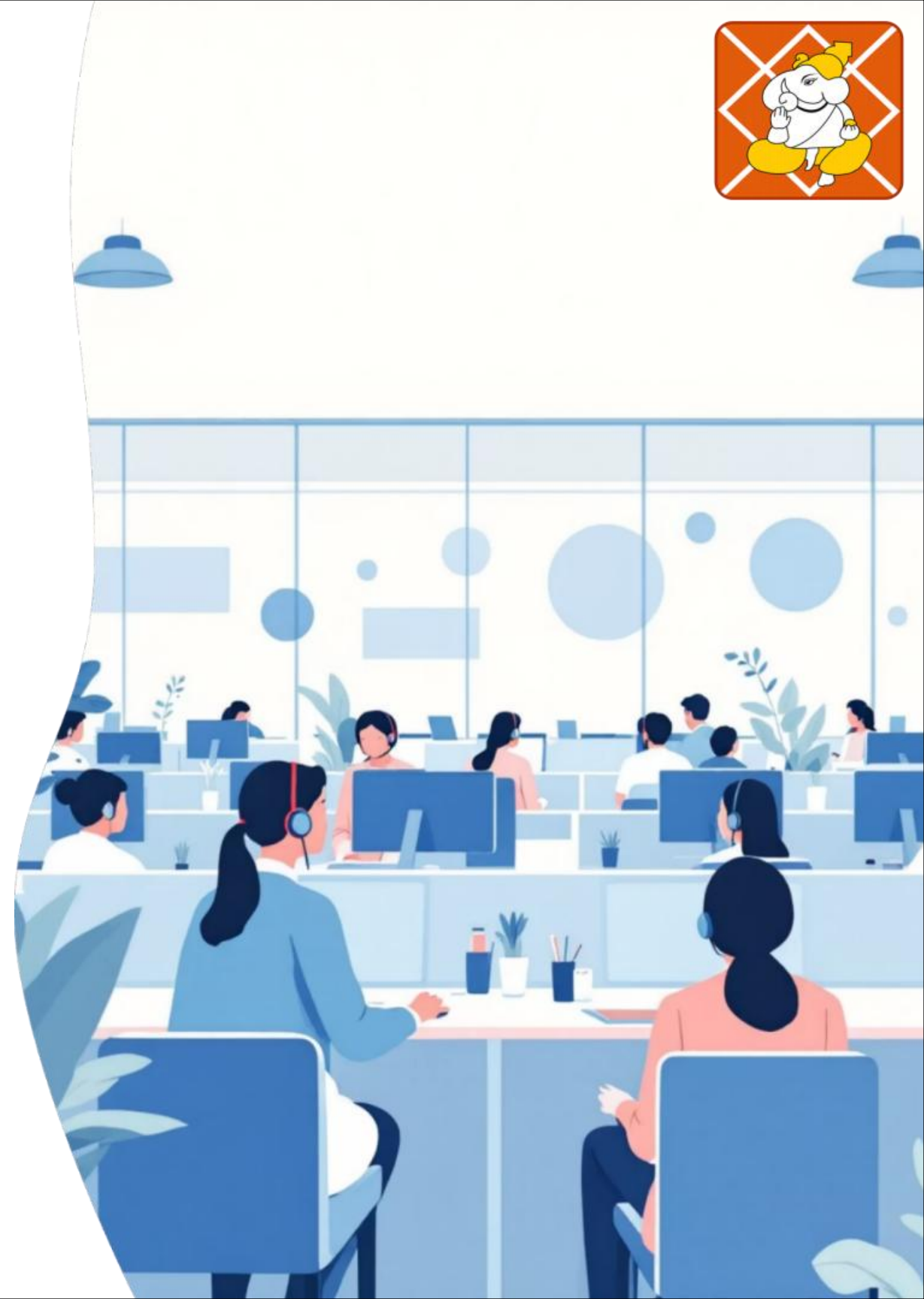# AstroSage Call Center Optimization

Strategic Investment Analysis for Operational Excellence

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Problem Statement

AstroSage operates a complex multi-channel call center serving thousands of customers daily. Rising customer expectations, seasonal demand volatility, and operational inefficiencies threaten profitability. This analysis identifies performance gaps and recommends a ₹1 Crore strategic investment to optimize operations and enhance customer satisfaction.

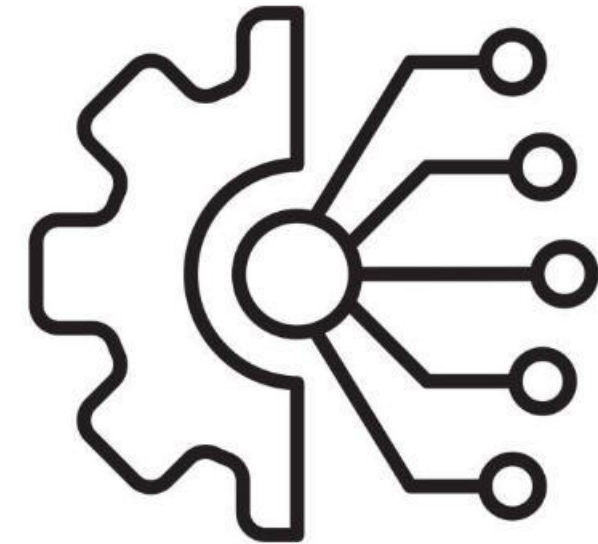|	_id	user	chatStatus	guru	guruName	gid	uid	consultationType	website	refundStatus	isWhiteListUser	chatSeconds
2	656922f2919324acb6e87139	65691b0c919324acb6e7e046	incomplete	65054786f5f203225bfcdd0d	Astro Sanjeev	95	30129	Chat	gurucool	no-refund	FALSE	300
3	65692413919324acb6e87441	65691b0c919324acb6e7e046	incomplete	65054786f5f203225bfcdd0d	Astro Sanjeev	95	30129	Chat	gurucool	no-refund	FALSE	300
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8	65693157919324acb6e888c3	6569313c919324acb6e88758	incomplete	65054786f5f203225bfcdd0d	Astro Sanjeev	95	30131	Chat	gurucool	no-refund	FALSE	300
9	656931d2919324acb6e889af	656931be919324acb6e8896c		652863242c4f29e6d54f42c5	Astro Rajesh S	241	30132	Call	app	no-refund	FALSE	
10	65693354919324acb6e88ed7	65693346919324acb6e88d82	incomplete	65054786f5f203225bfcdd0d	Astro Sanjeev	95	30133	Chat	gurucool	no-refund	FALSE	300
11	656934bc919324acb6e89306	6567adc8919324acb6a3be01		65054788f5f203225bfcdd5b	Astro Prashant	178	29614	Call	app	no-refund	FALSE	
12	656935a9919324acb6e89992	6568a45e919324acb6e169d1	incomplete	65054789f5f203225bfcdd8e	Astro Yogendra	201	30005	Chat	gurucool	no-refund	FALSE	300
13	65693929919324acb6e8a030	6569391b919324acb6e89fc3	incomplete	65054789f5f203225bfcdd8e	Astro Yogendra	201	30135	Chat	gurucool	no-refund	FALSE	300
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19	6569412b919324acb6e8c082	65693e1e919324acb6e8ad54	incomplete	65054786f5f203225bfcdd0d	Astro Sanjeev	95	30137	Chat	gurucool	no-refund	FALSE	300
20	656943b4919324acb6e90d53	6568ae42919324acb6e264e5	failed	65054786f5f203225bfcdd0d	Astro Sanjeev	95	30022	Chat	gurucool	no-refund	FALSE	300
21	6569441b919324acb6e9126b	6568af79919324acb6e287b5	incomplete	65054789f5f203225bfcdd8e	Astro Yogendra	201	30026	Chat	gurucool	no-refund	FALSE	300
22	65694480919324acb6e9773e	6568ae42919324acb6e264e5	failed	65054786f5f203225bfcdd0d	Astro Sanjeev	95	30022	Chat	gurucool	no-refund	FALSE	300
23	6569448a919324acb6e9775e	6568e0de919324acb6e47e93		65489f0807bc1e26099117f8	Astro Shalini	256	30073	Call	app	no-refund	FALSE	

Data Overview

2,790 unique users served by 305 gurus.

Covers 34 days of data from India.

8,512 total calls (41% completed, 14% failed, 10% incomplete).

Data used to analyze customer trends and optimize operations.

Data Cleaning & Preparation

Handle missing values and blank data cells across the dataset.

Normalized date values in day, month and year for daily, monthly and yearly reports.

This dataset allows for an in- depth understanding of AstroSage market presence and operational scope.

A good dataset is important to understand the operational cost , customer satisfaction and trend in the sales of call center.

This dataset enable us to predict and suggest future investments to grow the sales Turnover.

Analytical Approach

- *Data Cleaning - Used spreadsheets functions like trim and Removing duplicates for data cleaning.*

- *Data Enrichment - Added new variables using Date functions for better analysis.*

- *Customer Segmentation - Used Sorting and Filtering to classify customers based on consultation type and summarizing key metrics and Identifying connection patterns across different metrics and product categories.*

- *Visualization - Created interactive dashboard using different charts for detailed view of dataset.*

Dashboard Walkthrough

The interactive dashboard provides a unified view of call center performance across key operational KPIs.

Metrics Displayed

- *Total Revenue & Agent Earnings*

- *Total Calls & Chats*

- *Total Active Gurus*
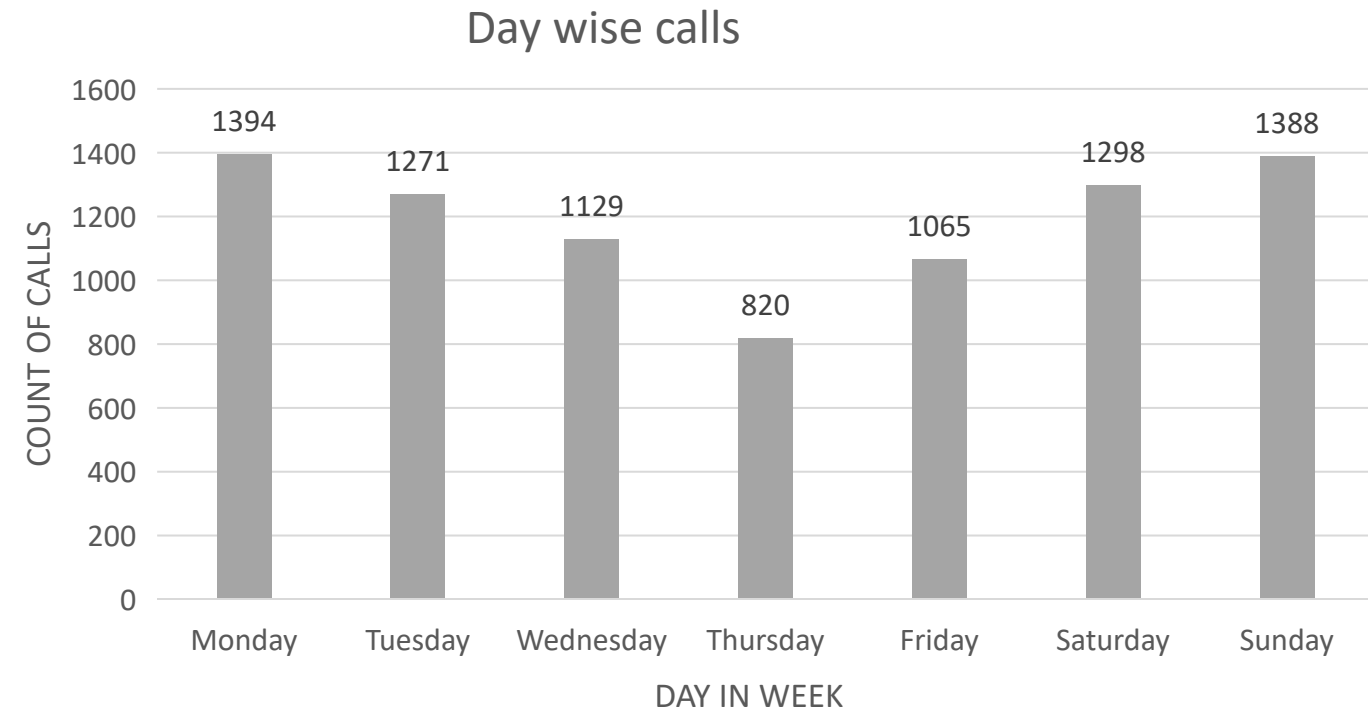
- *Average Customer Rating*

- *Average Calls per Agent*

Total Revenue	Guru Earnings	Total Calls
214065.90	34	8365

Total Chats	Total Gurus	Avg Rating	Average calls Per Agent
19515	131	2.93	63.85

DayWise Change in Call Volume

•Call volume fluctuates across days, with noticeable dips after peak days.

•Highest spikes observed around mid-December, indicating higher customer activity before month end.

•Consistent drop towards month closing and early January, indicating lighter workload period.
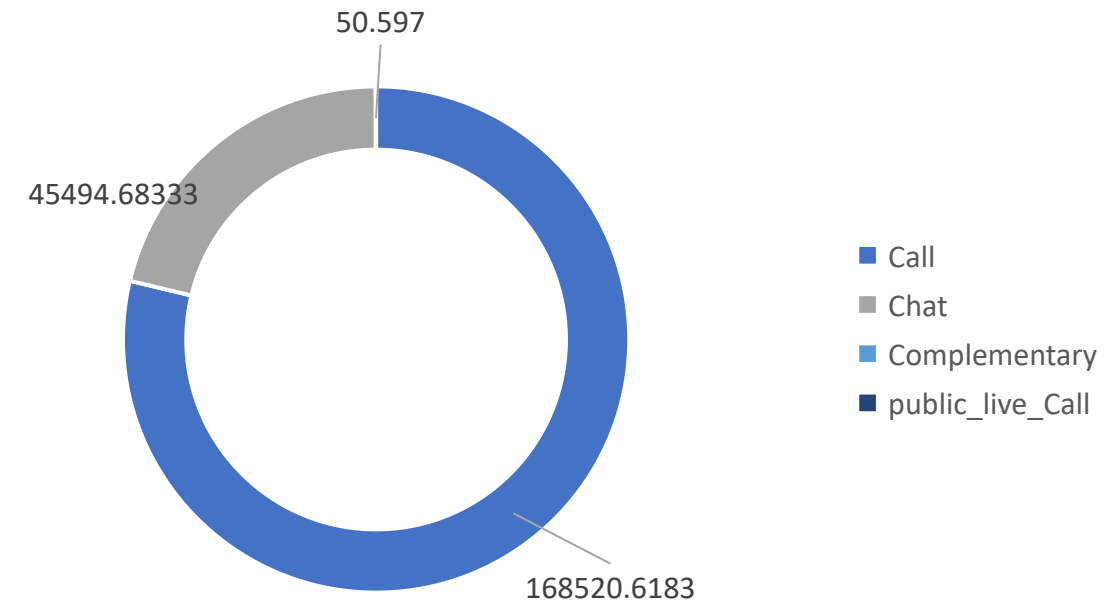

Day wise calls

Revenue Generated By Each Category

Multi-channel revenue streams show chat's emerging profitability and call center's core strength.

• *Call channel contributes the highest revenue, dominating overall earnings.*

• *Chat and public live call channels generate smaller revenue streams but support engagement.*

• *Complementary consultations offer no direct revenue but help in lead generation & retention.*
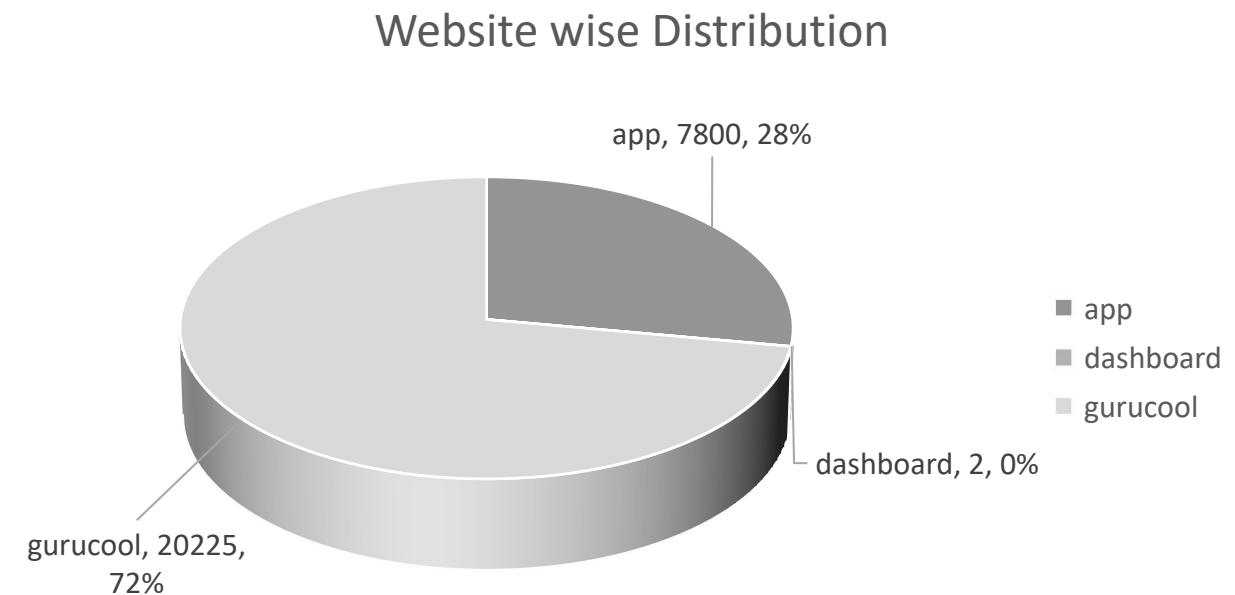
CHANNEL REVENU

50.597

45494.68333

168520.6183

- ■ Call
- ■ Chat
- ■ Complementary
- ■ public_live_Call

Website Distribution

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•*GuruCool leads with ~72% of all interactions (20,225), making it the primary customer touchpoint.*

•*The mobile app contributes ~28% (7,800), showing strong adoption with room to further improve mobile-first experience.*

•*Dashboard usage is minimal, indicating low reliance on web-portal support and potential for optimization or resource reallocation.*
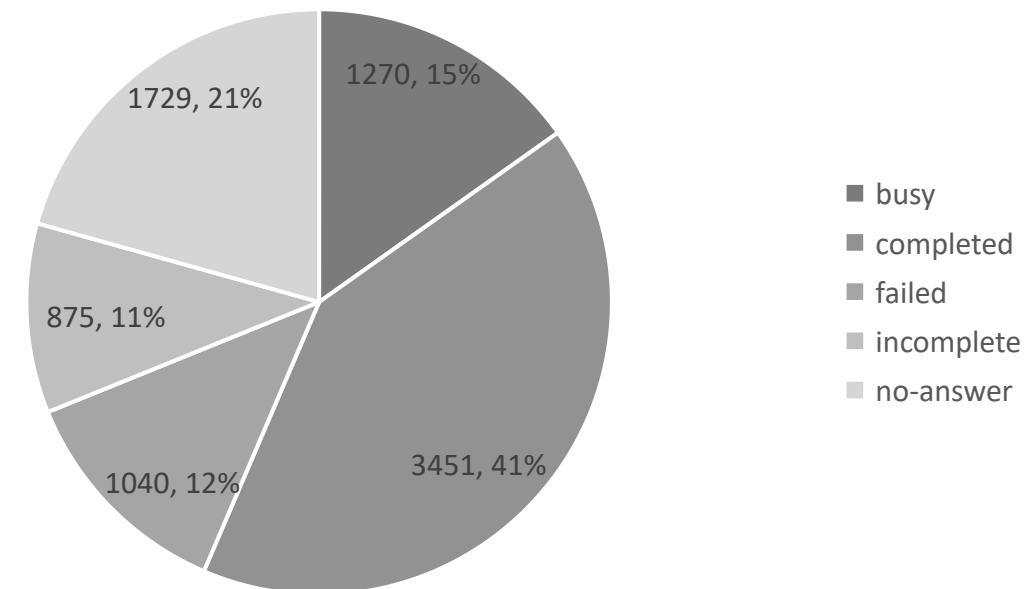
Website wise Distribution

app, 7800, 28%

gurucool, 20225, 72%

dashboard, 2, 0%

Legend:
- app
- dashboard
- gurucool

Call Status Distribution

Call completion rates and failure analysis reveal service quality and infrastructure challenges.

- *Majority of calls are completed, indicating system or agent efficiency.*

- *Significant share of busy and incomplete calls — opportunity to improve call handling & routing.*

- *Failed & no-answer calls also present — suggesting missed revenue and improvement area.*

Call Status Distribution

Legend:
- busy
- completed
- failed
- incomplete
- no-answer

Values shown: 1270, 15%; 1729, 21%; 875, 11%; 1040, 12%; 3451, 41%
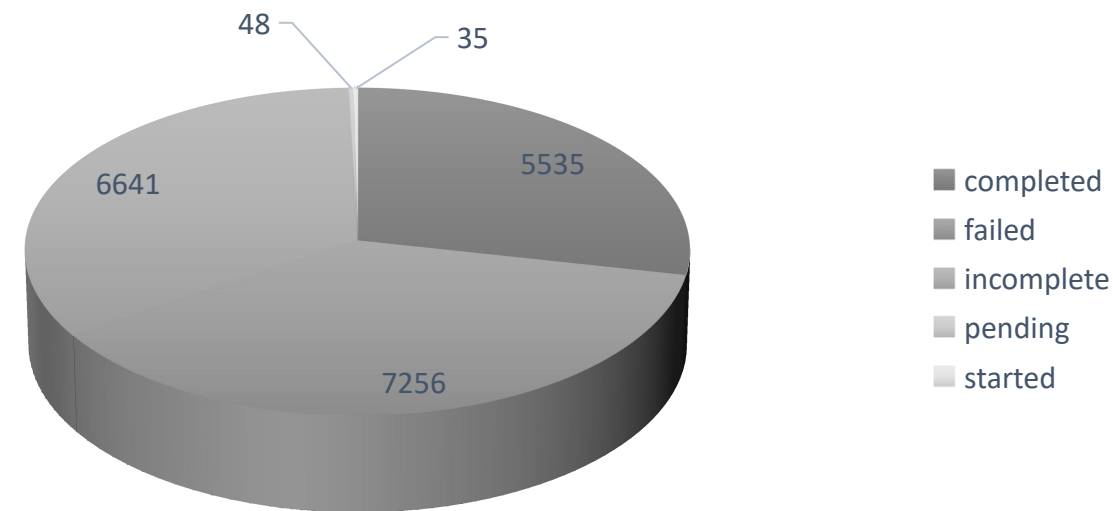
Chat Status Distribution

Chat completion rates and failure analysis reveal service quality and infrastructure challenges.

Most chats are successfully completed, reflecting strong chat support handling.

High number of pending and started chats — indicating room to streamline chat resolution speed.

Failure & incomplete rates are comparatively low, showing effective chat workflows.
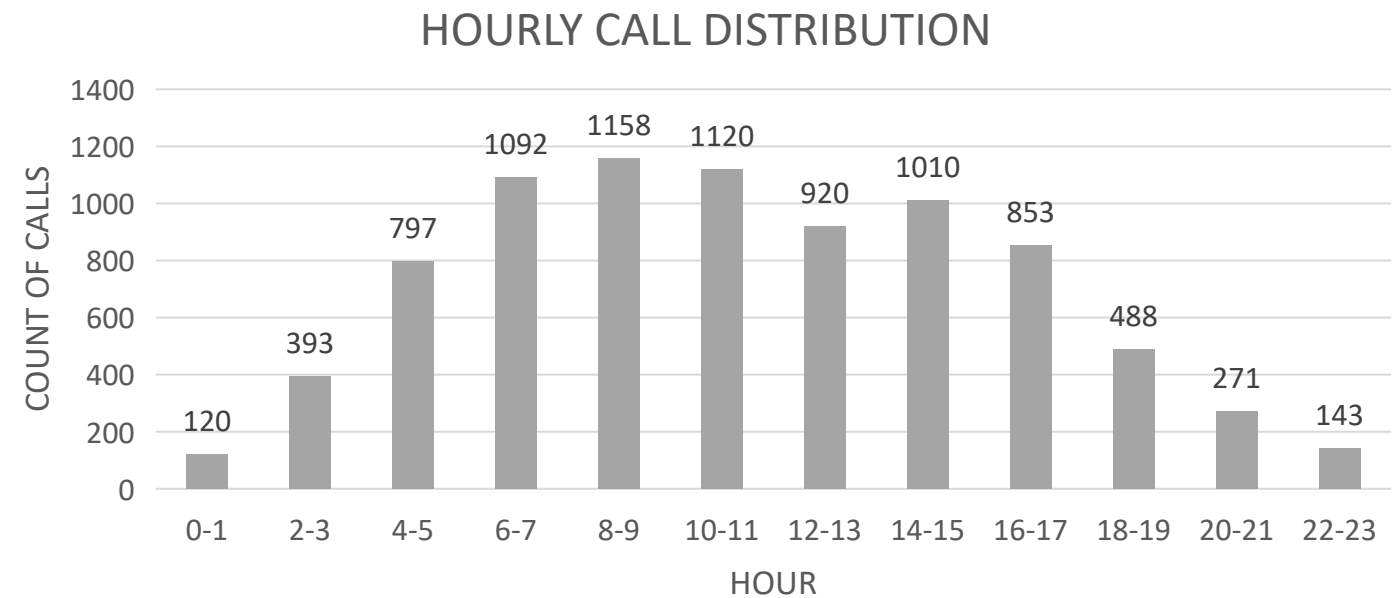
CHAT STATUS

48

35

5535

6641

7256

- completed
- failed
- incomplete
- pending
- started

Hourly Load Patterns & Peak Hours

- *Call volume sharply increases after 8 AM and peaks between 10 AM – 3 PM.*

- *Lower activity seen early morning (0–7 AM) and late evening (after 9 PM).*

- *Indicates need for more agents during mid-day hours and lighter staffing at night.*
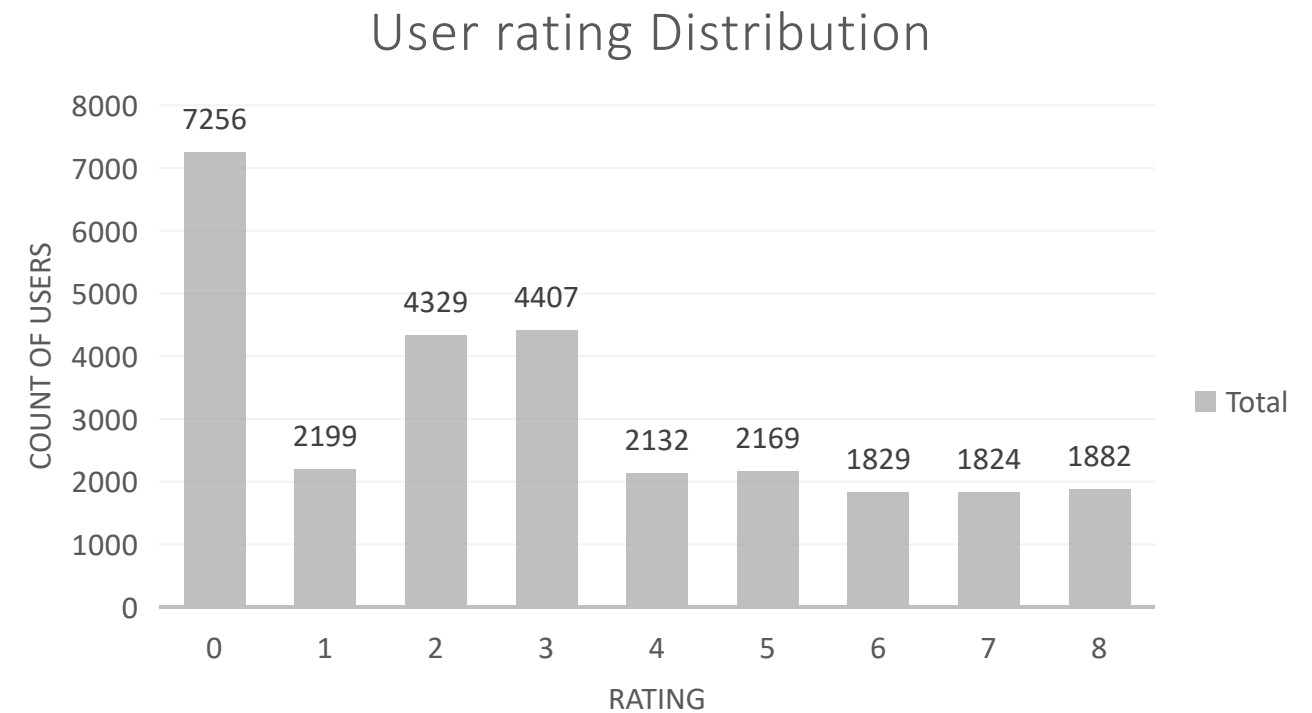
HOURLY CALL DISTRIBUTION

Bar chart titled "HOURLY CALL DISTRIBUTION" with COUNT OF CALLS on the vertical axis and HOUR on the horizontal axis:

Hour	Count of Calls
0-1	120
2-3	393
4-5	797
6-7	1092
8-9	1158
10-11	1120
12-13	920
14-15	1010
16-17	853
18-19	488
20-21	271
22-23	143

Guru Evaluation Score: 8 out of 8
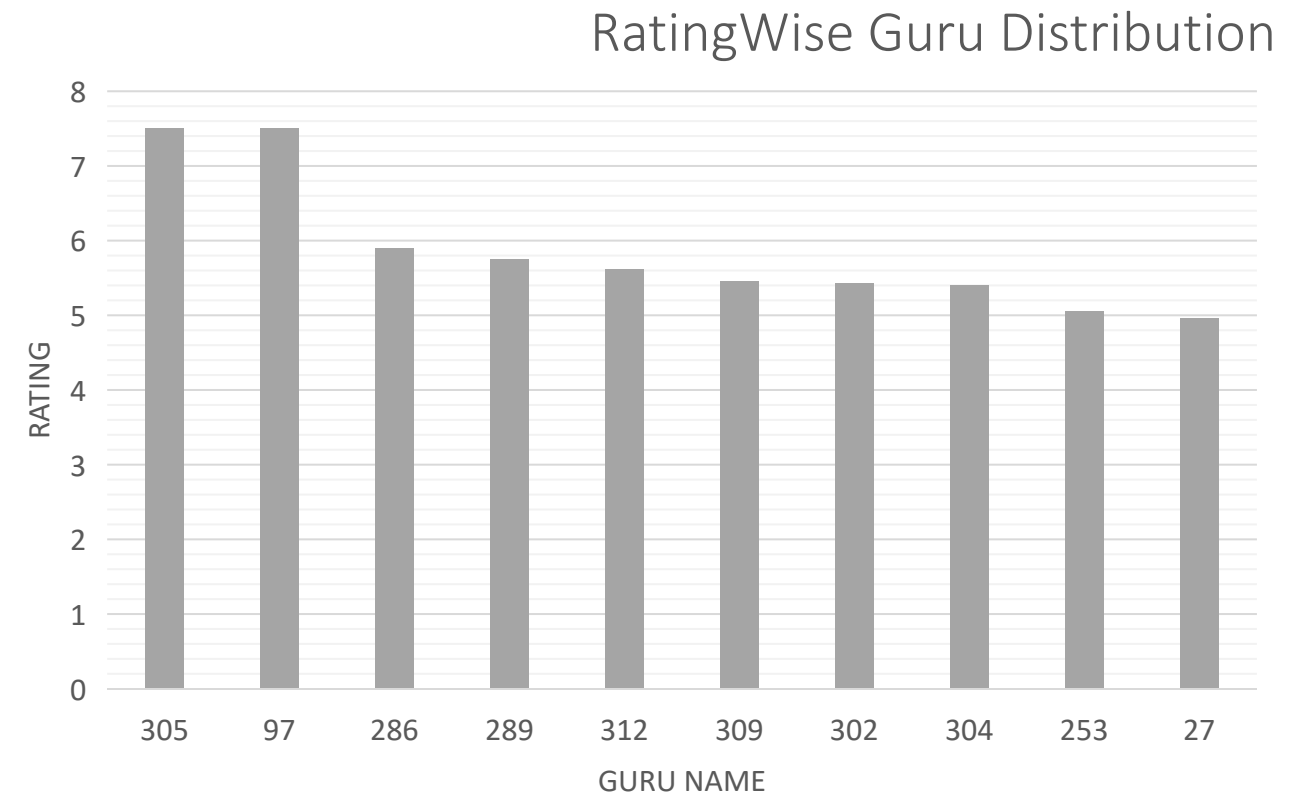
• The column chart illustrates the distribution of users based on their ratings.

• Call consultations require improvement to enhance the overall quality of user experience.

• User ratings for chat consultations are comparatively higher than those for call consultations.

User rating Distribution

Rating Wise Guru Distribution

- *Top agents consistently deliver ratings around 7–8, indicating strong service quality.*

- *Performance steadily tapers after top agents — skill gap exists in lower-ranked agents.*

- *Highlights potential to reward top performers & train bottom-tier agents for consistency.*
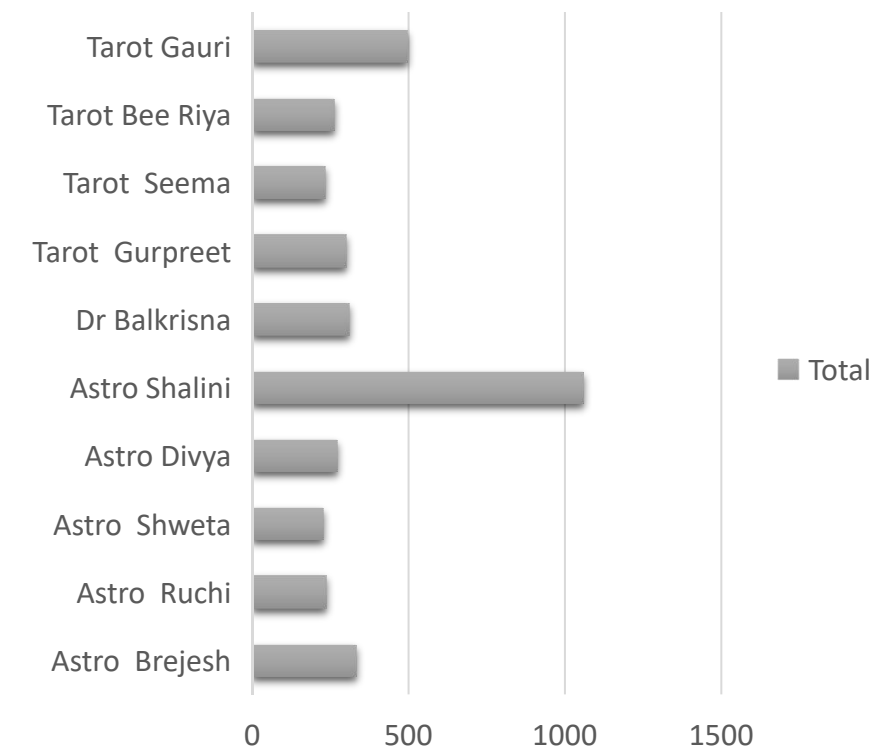

RatingWise Guru Distribution

Top 10 Agents (By Performance)

•*Astro Shalini leads by a wide margin, handling over twice the calls of any other Guru — reflecting strong expertise and customer trust.*

•*The distribution is highly uneven, suggesting a need to balance workload and maintain consistent service quality.*

•*The trend highlights opportunities for mentorship, where top performers can help uplift overall team efficiency.*

Top 10 Guru Per call Handled

Key Strategic Insights

Modernize Technology Infrastructure

Reduce high failure rates (59% calls, 71% chats) by adopting a cloud-based omnichannel platform with smart routing, real-time insights, and automated callbacks to improve service reliability and user experience.

Optimize Workforce Management (WFM)

Use AI-driven scheduling, demand forecasting, and adaptive staffing to balance workloads during the long 6 AM–5 PM peak window, reducing agent fatigue and boosting productivity and engagement.

Implement Targeted Capability-Building Programs

Improve the 2.93/8 service rating through ongoing, role-specific training in communication, tool usage, and customer engagement to strengthen performance and service quality.

Key Strategic Insights

Refine Channel Strategy to Drive Revenue Growth

With calls driving 79% of revenue and chats limited by high failure rates, focus on a dual strategy: reinforce call operations for stability while upgrading the chat channel through better technology and performance tracking.
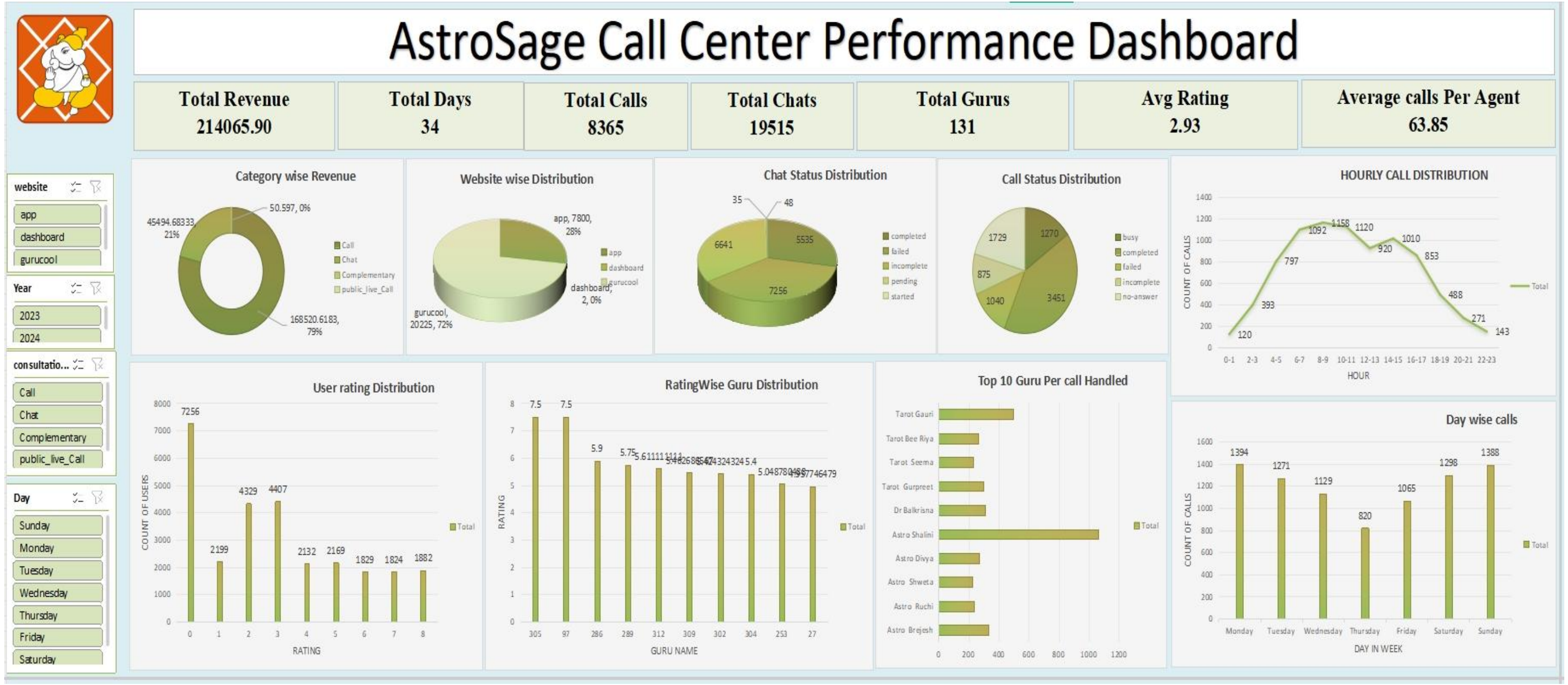
Integrate AI-Driven Automation and Analytics

Reduce manual inefficiencies by using AI chatbots for first-level support and real-time analytics for sentiment tracking, enabling faster responses and smarter, data-driven decisions.

Introduce Performance-Linked Incentive Programs

Address workload imbalance — with the top 10 agents handling 44% of calls — by introducing performance-based incentives that reward efficiency and service quality.

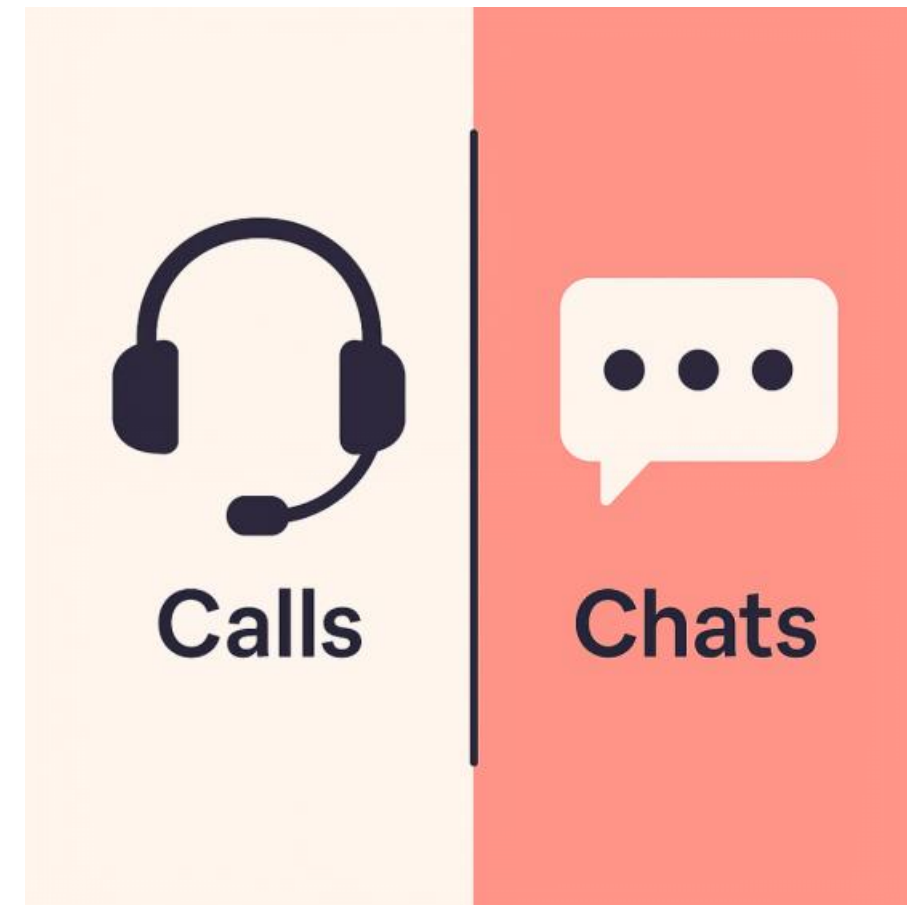# Consolidated Call Center Performance Dashboard

Conclusion

Summary Of *Findings*

Significant system failure rates and workload disparities emerged as the primary operational bottlenecks.

The average customer satisfaction score of 2.93/8 underscores an immediate need to enhance service quality and user experience.

Calls continue to generate 79% of total revenue, whereas chat performance remains notably underperforming.

Conclusion
Strategic Insights

Modernize Technology Infrastructure: Upgrading systems is imperative to eliminate core inefficiencies and streamline operations.

Empower Through Training & AI: Combining skill development with intelligent automation will elevate service consistency and quality.

Leverage Data-Driven Workforce Planning: Smart scheduling and analytics will optimize agent performance during peak demand periods.

Foster a Reward-Driven Culture: Performance-based incentives will encourage balance, motivation, and sustained productivity.

Final Outlook

By executing these strategic initiatives, AstroSage's call center will be able to:

🚀*Elevate customer satisfaction and loyalty through consistent, high-quality interactions.*

⚙*Enhance operational efficiency with intelligent automation and optimized scheduling.*

💰*Maximize profitability by increasing task completion rates and refining revenue streams.*

👥*Cultivate a motivated, well-balanced workforce dedicated to delivering exceptional service.*