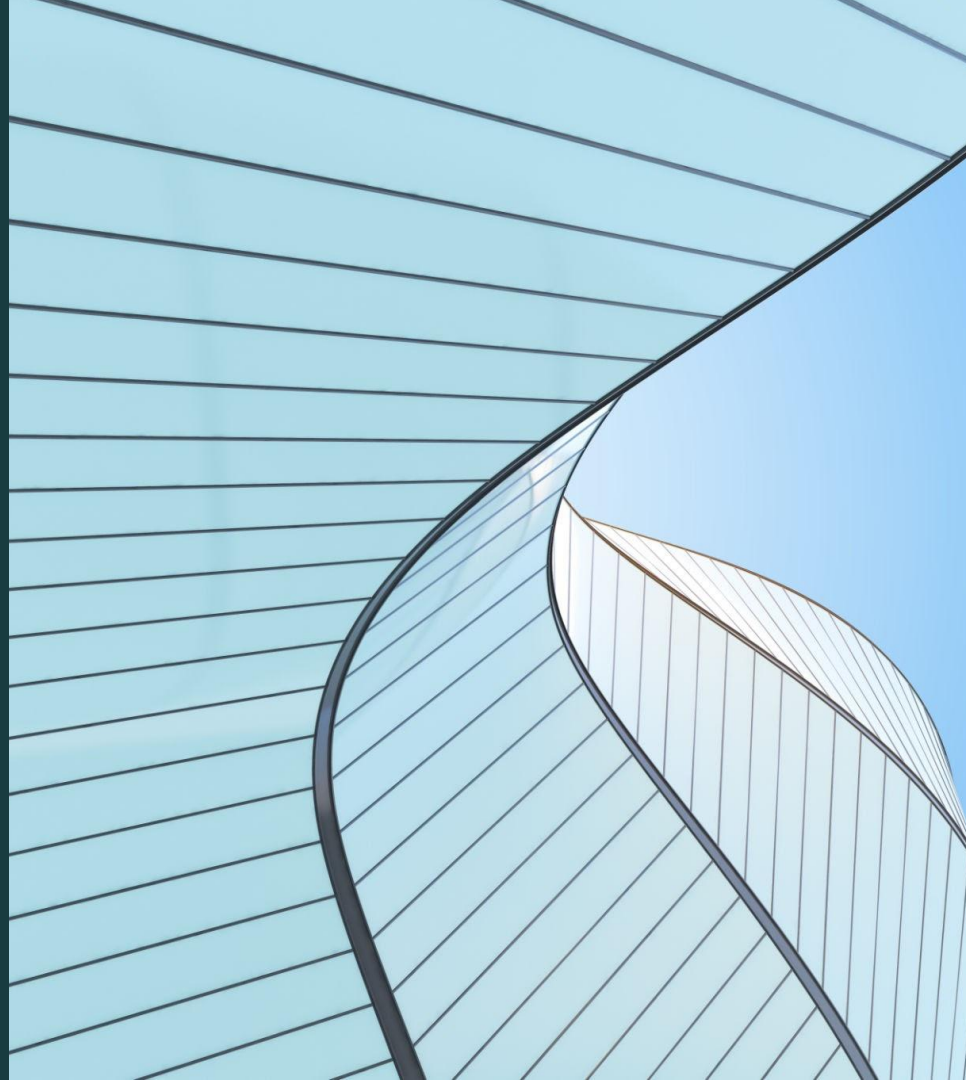By Kendall D'Ascoli

Signal & Support: Diagnosing Engagement with Real-Time Feedback

GitHub Repo:

https://github.com/kendalldascoli/Customer_Support_Efficiency_Analysis.git

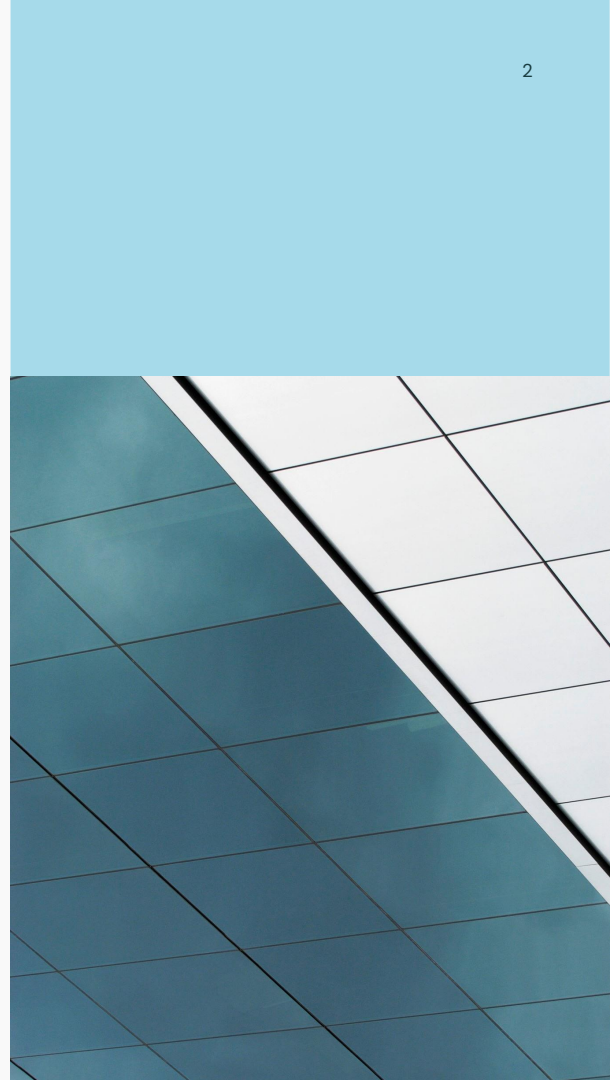# Elevating Customer Support

Helping: Customer Experience Team

Problem: Unclear patterns in support requests

Solution: Analyze support reviews + tickets

Tools: SQL, Looker, Excel, API, Web Scraping

Robert Half

Why This Job? Why Me?

Solutions Specialist / Business Analyst ✓
Robert Half · Budd Lake, NJ (On-site)

Requirements

- Bachelor's degree, plus 6-8 years of relevant work experience required
- Expertise in business process modeling, requirements documentation, and stakeholder management.
- Strong knowledge of the Software Development Life Cycle (SDLC) and Agile methodologies.
- Proficiency in SQL for data analysis and querying databases.
- Experience with business intelligence (BI) tools, specifically QlikSense.
- Ability to create flowcharts, sequence diagrams, swimlanes, and data flows to capture business scenarios and system capabilities.
- Understanding of APIs, data integration, and UI/UX best practices.
- Strong knowledge of JavaScript frameworks such as Vue.js or React is a plus.
- Excellent problem-solving, analytical, and communication skills.

Preferred Skills

- Transportation industry or supply chain background is a plus
- Exposure to Robotic Process Automation (RPA) tools for data management
- Scrum Master Certification is a plus

Role: Solutions Specialist/ Business Analyst

Tools: SQL, data visualization, reporting

Fit: I've built the dashboard they're hiring for

Solutions Specialist / Business Analyst ✓
Robert Half · Budd Lake, NJ (On-site)

About the job

Salary: $100000.00 to $125000.00 yearly

Description

We are seeking a Solutions Specialist / Business Analyst to join our team in Rockaway, New Jersey. In this role, you will be instrumental in bridging the gap between business requirements and technical implementation. You'll collaborate with internal and external stakeholders, optimize business processes, and use your SQL expertise to support data-driven decision-making.

Responsibilities

- Collaborate with business stakeholders to understand their challenges, objectives, and requirements
- Analyze and identify process inefficiencies, recommending data-driven solutions
- Document business and functional requirements, workflows, and use cases
- Develop user stories, test scripts, and acceptance criteria for development teams
- Work alongside IT, product owner, and development teams to translate business needs into technical solutions
- Support solution design, system configuration, and testing efforts
- Ensure implemented solutions align with business objectives and technical requirements
- Facilitate clear communication between business teams and technical teams, acting as a liaison
- Lead workshops, stakeholder meetings, and training sessions
- Provide end-user support, documentation, and training for new processes and systems
- Analyze data trends, generate insights, and support decision-making
- Develop reports and dashboards to track key business metrics
- Research, evaluate, and implement third-party SaaS solutions and integrate them with in-house products
- Develop detailed project plans and track progress to ensure successful execution
- Maintain comprehensive project documentation.
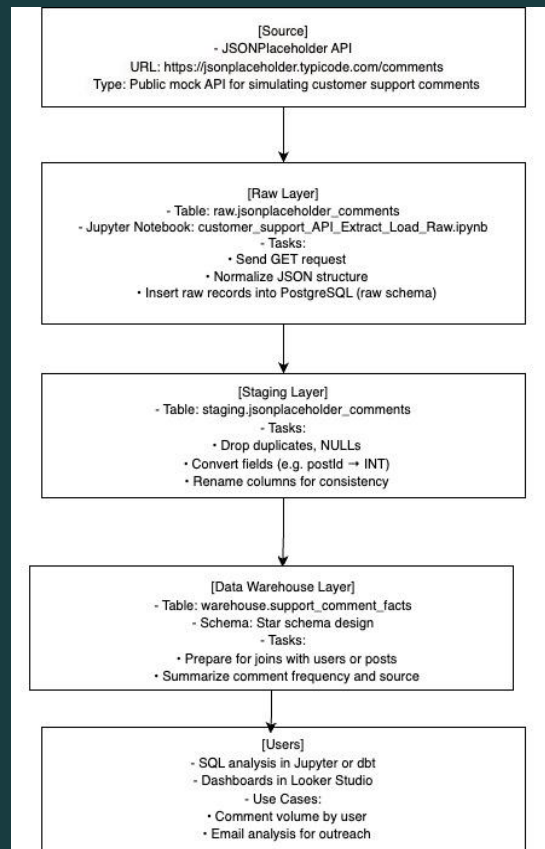
The API Angle: Simulating Engagement

Source: JSONPlaceholder

Data: Users + Comments (mock CRM)

Relevance: Models customer interaction trends

Pipeline: Python → PostgreSQL → Staging + Warehouse

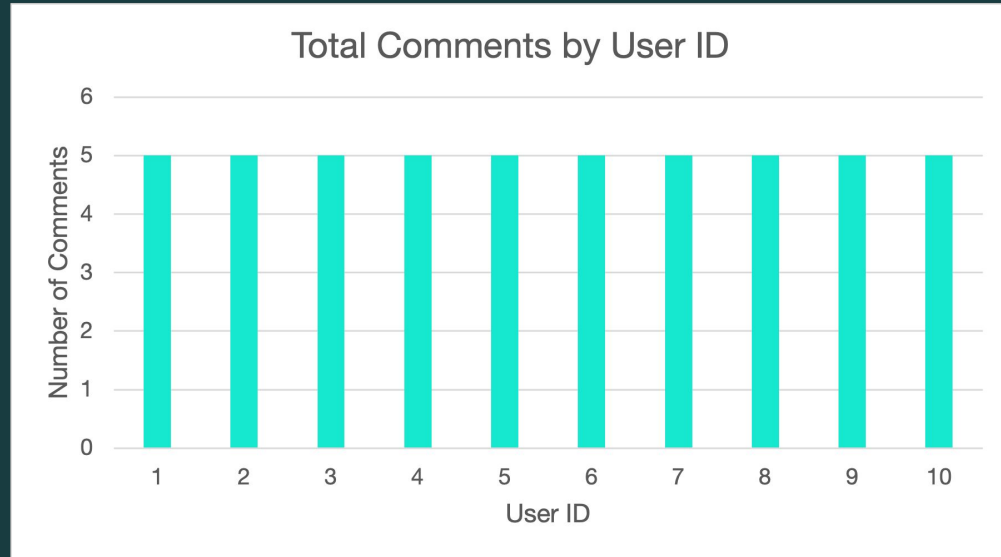Output: Engagement table for analytics

Uniformity in Users

Business Question: Are all users equally engaged?

Insight: Every user has 5 comments → uniform

Recommendation: Simulate varied activity levels
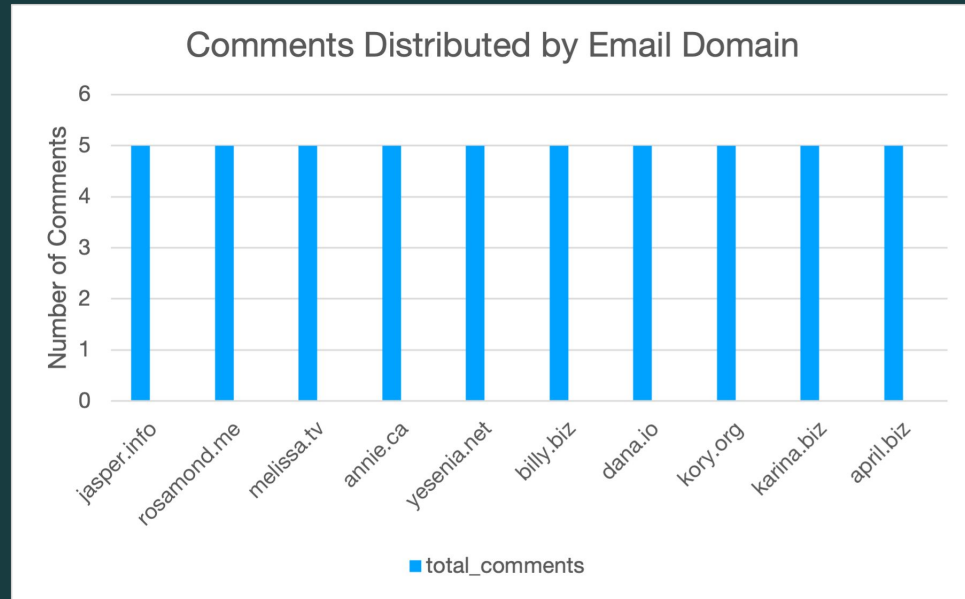
Prediction: Real data = long-tail distribution

Diversity in Email Domain Engagement
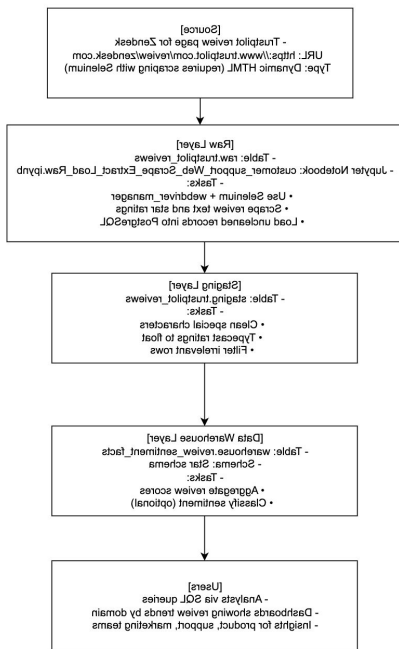
Business Question: Do certain domains engage more?

Insight: Comment engagement equally distributed among domains

Recommendation: Target high–engagement groups

Prediction: Focused support = better CX

Comments Distributed by Email Domain

The Web Scrape Story: Live Customer Voice

[Source]
- Trustpilot review page for Zendesk
- URL: https://www.trustpilot.com/review/zendesk.com
- Type: Dynamic HTML (requires scraping with Selenium)

[Raw Layer]
- Table: raw.trustpilot_reviews
- Jupyter Notebook: customer_support_Web_Scrape_Extract_Load_Raw.ipynb
- Tasks:
• Use Selenium + webdriver_manager
• Scrape review text and star ratings
• Load uncleaned records into PostgreSQL

[Staging Layer]
- Table: staging.trustpilot_reviews
- Tasks:
• Clean special characters
• Typecast ratings to float
• Filter irrelevant rows

[Data Warehouse Layer]
- Table: warehouse.review_sentiment_facts
- Schema: Star schema
- Tasks:
• Aggregate review scores
• Classify sentiment (optional)

[Users]
- Analysts via SQL queries
- Dashboards showing review trends by domain
- Insights for product, support, marketing teams

Source: Trustpilot (scraped Zendesk reviews)

Data: 64K reviews with text sentiment

Relevance: Real customer perception

Pipeline: Selenium → Pandas → PostgreSQL

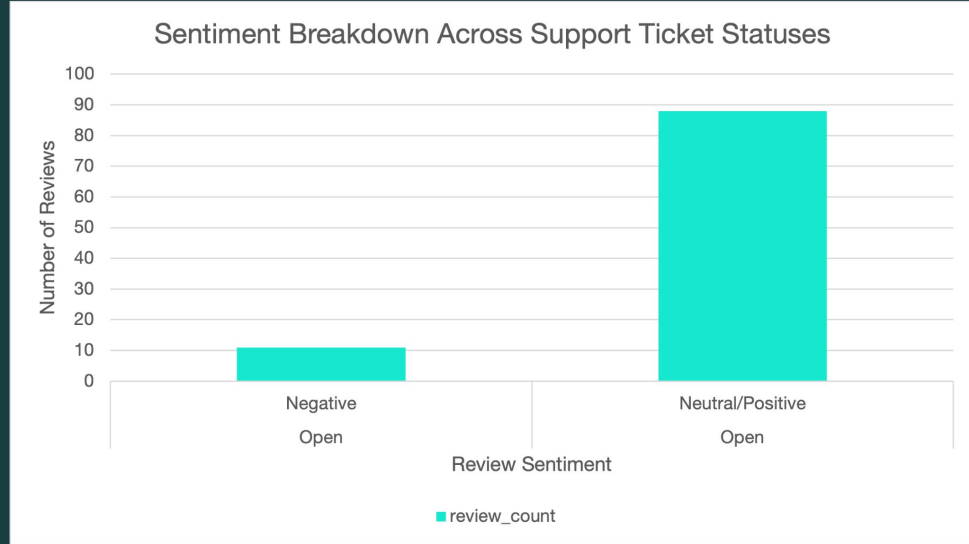Output: Cleaned, joined review + ticket data

Domination of Open Tickets

Business Question: Where do unhappy users concentrate?

Insight: "Open" tickets dominate both sentiments

Recommendation: Address open backlog faster

Prediction: Reducing open time will improve satisfaction

Sentiment Breakdown Across Support Ticket Statuses
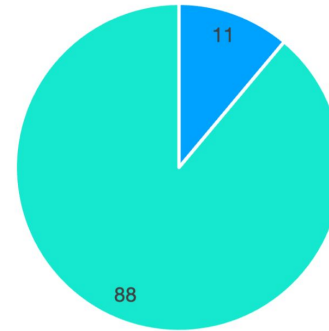
Positivity in Numbers

<u>Business Question</u>: What is the distribution of neutral/positive reviews to negative

<u>Insight</u>: The reviews are overwhelmingly positive

<u>Recommendation</u>: Explore customer experience further in positive vs negative reviews

<u>Prediction</u>: Close gap of negative to positive reviews

Distribution of Review Sentiments

11

88

■ Negative   ■ Neutral/Positive

Closing the Loop: Why I'm the Fit

Role-ready: SQL pipelines, dashboards, actionable insights

Delivered: 4 queries, 4 visuals, 2 joined datasets

Next Step: Put these tools into action at your company

Outcome: Save support hours, elevate experience

Value: I connect raw data to business impact