# Customer Service Optimisation with Shopee

IE3100M Systems Design Project | Industrial Systems Engineering & Management

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## Company Background

Shopee is the popular e-commerce platform subsidiary of the SEA Group. Founded in 2015 and headquartered in Singapore, it is primarily based in the South East Asian markets such as Malaysia, Indonesia and the Philippines.

## Methodology

Problem Description → Scope Definition → Process Analysis → Validation of Findings → Propose Recommendations

## 1. Problem Description

Due to its rapid growth, Shopee Philippines (PH) is facing a problem on their customer service (CS) due to increasing number of queries, feedback and complaints received from customers. The objective of the project is to look for a more sustainable solution that could radically improve the efficiency of the customer service process without affecting customer satisfaction.

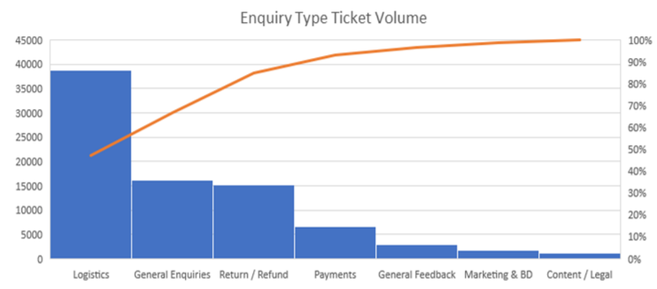
## 2. Scope Definition

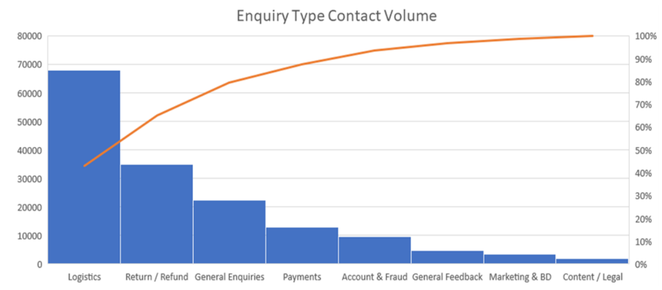
***Data Collection***

- Extraction from Shopee's Spark Servers via ZenDesk APIs for in-depth exploration using data pipelines built in Python.
- June to August 2018 data comprises more than 1.5 million tickets extracted.
- Built internal tools to further investigate the tickets and formulate hypotheses.

***Identification of Enquiry Type***

- Statistical analysis of customer data extracted identified ***Return/Refund (R/R) tickets*** as the area of highest potential impact based on Pareto charts such as Ticket volume against Enquiry Type and Total Contact against Enquiry Type.

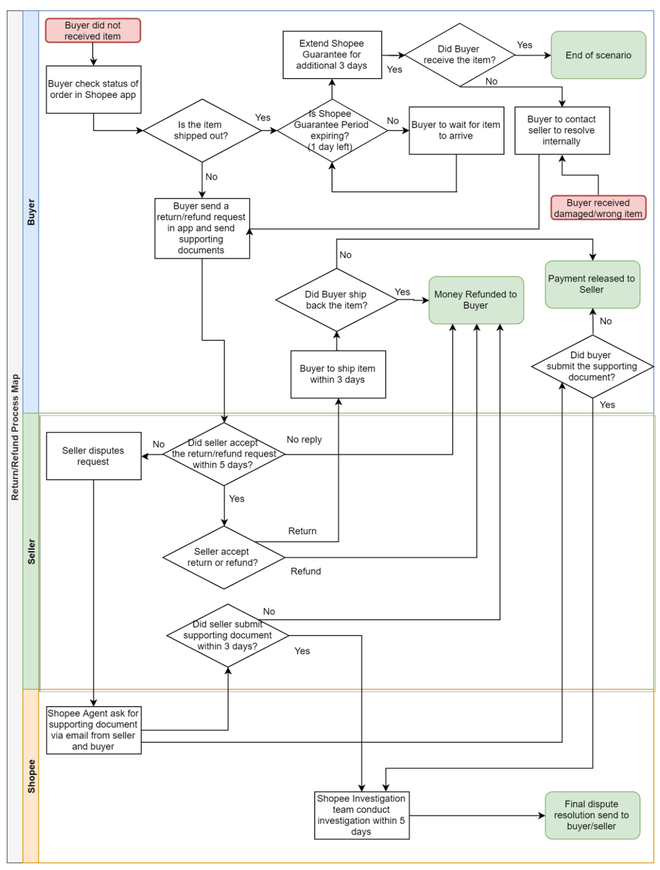



## 3. R/R Process Analysis

### General R/R Process

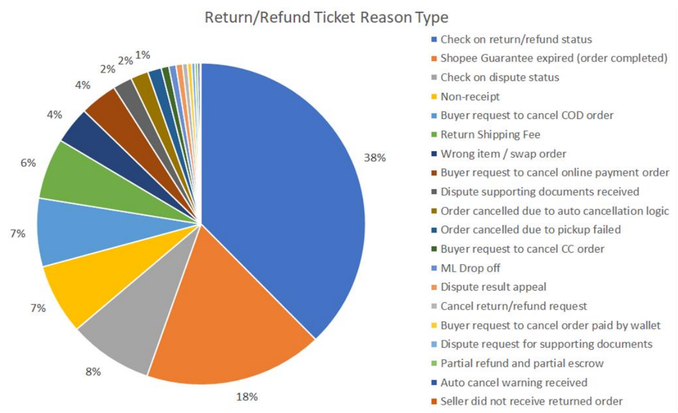
A ***swimlane process flowchart*** was drawn to delineate the possible decisions and interactions between the buyers, sellers and Shopee CS agents.




- ***Competitor analysis*** was conducted to benchmark Shopee's R/R process and understand service differentiation in the industry.

| Situation | Criteria | Shopee | Lazada | Zalora | Qoo10 | eBay | Alibaba |
|---|---|---|---|---|---|---|---|
| Before submission of the return request | Claim period | Within Shopee Guarantee period of 14 days | Either 7 or 14 days depending on its Return Policy | Within 30 days of receipt | Within 7 days after receiving the product | Not specified | Within 30 days of receipt |
| | Buyer is required to provide reason for return | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Buyer is able to upload images to provide proof | ✓ | ✓ | × | ✓ | ✓ | ✓ |
| After submission of the return request | Seller is required to respond to the buyer's request within certain number of days | ✓ 5 days | ✓ 3 days | Not applicable | ✓ 3 days | ✓ 3 days | ✓ 7 days |
| | Buyer is informed of the expected waiting time from seller | ✓ | ✓ | Not applicable | × | ✓ | ✓ |
| | Buyer is required to return the item within certain number of days | ✓ Either 3 or 5 days | ✓ Either 7 or 14 days | ✓ 30 days | ✓ Not specified | ✓ 5 days | ✓ Not specified |
| After returning the item | A return status page is available (with the current status and next action required) | ✓ | ✓ | × | × | ✓ | ✓ |
| After rejection of the return request | The ecommerce provider will automatically take over the case | ✓ | × | Not applicable | × | × | × |
| Dispute process | Buyer and seller are required to be in touch within certain number of days | ✓ 3 days | ✓ 3 days | × | ✓ 3 days | ✓ 3 days | ✓ 3 days |
| | A dispute status page is available | × | × | × | × | × | ✓ |

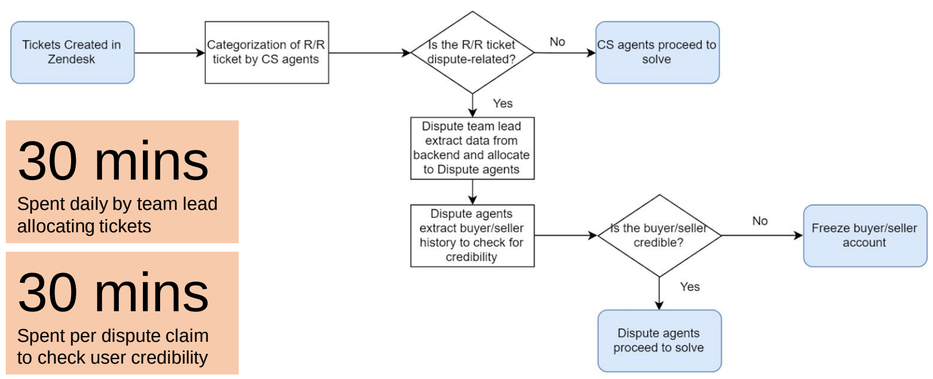
- ***Data analysis of R/R tickets*** extracted was conducted to determine the severity of the postulated issues.




Two issues were identified: ***Obsolete R/R Frequently Asked Questions (FAQ) page*** and ***Lack of transparency of R/R process***

### Agent R/R Process

The agent workflow process was ascertained from investigating the agent workflow on the CS resolution software, agent surveys and interviews.

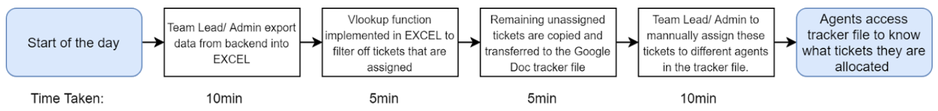



**30 mins**
Spent daily by team lead allocating tickets

**30 mins**
Spent per dispute claim to check user credibility

Three issues were identified: ***Manual categorization,*** ***Manual allocation*** and ***User credibility***

- ***Manual categorization*** of enquiry tickets into its respective types is inefficient as CS agents are required to read the entire enquiry ticket before tagging. Enquiry tickets are often mis-tagged as a result.
- ***Manual allocation*** of dispute tickets to the CS agents costs the dispute team lead an average of 30 minutes each day and prolongs the resolution time of subsequent dispute tickets.




- ***User credibility*** checks on users to ascertain the historical user credibility for dispute claims would take about 30 minutes per dispute case. This is resource expensive and inconsistent due to subjective adjudication by CS agents.

## 4. Validation of Findings

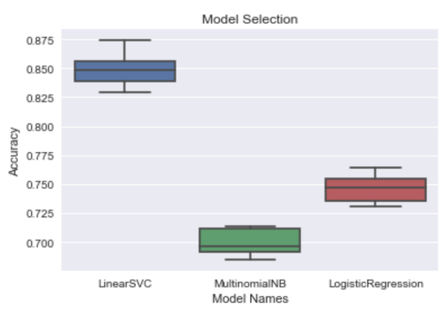
- Extensive discussions and an online video interview was conducted with the Shopee PH R/R and Dispute team leader and the Regional Operations team in the Shopee HQ.
- An additional survey was conducted with CS agents for Dispute tickets specifically.
- Results of the interview and survey corroborated with the findings for the General R/R process and Agent R/R process.

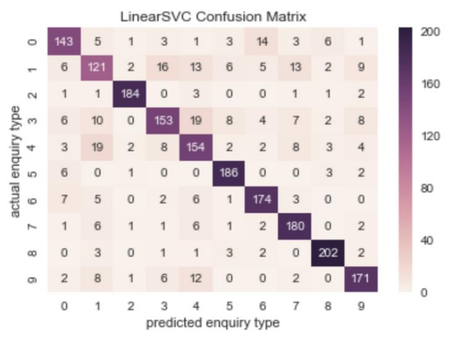
## 5. Propose Recommendations

| | | Auto Allocation of Tickets to dispute agents using Saleforce feature | Assisted Categorisation of tickets into enquiry type (Machine Learning) | User Credibility Rating System | Redesign of FAQ | R/R Action & Status Page |
|---|---|---|---|---|---|---|
| General R/R Process | Ineffective R/R Frequently Ask Questions (FAQ) Page | | X | | X | |
| | Lack of Transparency & Clarity of R/R Process | | | | | X |
| Agent Workflow Process | Manual Categorization | | X | | | |
| | Manual Allocation | X | | | | |
| | User Credibility | | | X | | |

### Assisted Categorization using Machine Learning

- TFIDF analysis was conducted to determine a word's frequency and importance in a ticket.
- Three machine learning models were used. LinearSVC was able to achieve the highest average prediction accuracy of 85%.



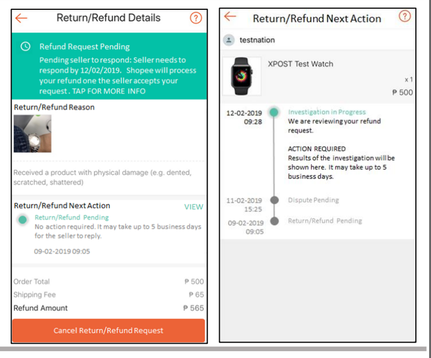

**85.0%**
Accuracy in identifying ticket enquiry type

### User Credibility Rating System

- Develop a seller rating system to identify seller historical win rate and percentile over a moving time average.
- Proof-of-concept developed and demonstrated to Shopee.

### Return/Refund Action & Status

- Mockup interface designed to highlight the next steps for the returns/refunds process.
- Provides increased transparency for the return/refund process.




### Redesign of FAQ

- Benchmark with seven ecommerce providers to improve clarity and accessibility of Shopee's R/R FAQ.

| Criteria | Features | Shopee | Lazada | Zalora | Galleon | Qoo10 | eBay | Alibaba | Amazon |
|---|---|---|---|---|---|---|---|---|---|
| Clarity | Provides a separate page/section on the duration of the quality inspection process upon arrival at the warehouse | × | ✓ | × | × | × | × | × | × |
| | Provides a separate page/section on non-returnable/non-refundable items | × | × | ✓ | ✓ | × | ✓ | × | ✓ |
| | Use of screenshots/infographics/link to describe the process of requesting for returns/refunds | ✓ | ✓ | ✓ | × | ✓ | ✓ | ✓ | ✓ |
| Accessibility | Easily accessible from the homepage in a few clicks | ✓ in two clicks | ✓ in one click | ✓ in two clicks | ✓ in one click | ✓ in two clicks | ✓ in two clicks | ✓ in two clicks | ✓ in two clicks |
| | Accessible from the submitting of return/refund request page/from the checking of status page | × | × | × | × | × | × | × | ✓ |
| | AI chatbot is available | × | ✓ | × | × | × | × | ✓ | × |
| | Search engine is available | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Informative | Provides the information on the circumstances for returns to be applicable | ✓ | ✓ | ✓ | ✓ | × | ✓ | × | ✓ |
| | Provides the reimbursement options for different return reasons | × | ✓ | × | × | × | × | × | × |
| | Provides the description of the return process | ✓ | ✓ | ✓ | × | ✓ | ✓ | ✓ | ✓ |
| | Provides the information on the nearest return partner | × | ✓ | ✓ | × | × | × | × | × |
| | Provides the refund processing times for the different payment options | × | ✓ | ✓ | × | ✓ | ✓ | ✓ | ✓ |
| | Provides the information on the refund amount | × | × | × | ✓ | × | × | × | ✓ |
| | Provides the information on the supporting documents required from the buyer for different dispute reasons | ✓ | × | × | × | × | × | × | × |
| | Provides the consequences of misusing the returns/refunds | × | × | × | × | × | ✓ | × | × |

## Limitations

- Credit rating can currently only be calculated for the sellers because majority of the buyers has too few purchases to calculate a rating that is statistically significant.
- Since categorization of the enquiry type and allocation of dispute tickets are done manually, data retrieved from this two sources are less accurate due to the high rate of mis-tagging of tickets. This results in a lower accuracy of dataset for the Data Analysis Phase.

## Future Directions

- Improving user experience and user interface design of FAQ page could improve customer satisfaction and reduce inbound tickets.
- The text mining algorithm can be used to build an AI chatbot which can direct customers to the FAQ page before reaching the CS agents.
- Displaying the credit rating for sellers to the buyers on the Shopee platform, therefore encouraging sellers to reduce return rates and improve the quality of their products.