



Synchrony Solution Presentation

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Agenda



Problem Statement

Data Cleaning



Attributes Selection

Association Results



Recommendations



Problem statement



Identify patterns associated with floor calls, proposing suggestions on improving IVR's effectiveness to address the call



Understanding the central issue enables us to establish a clear analysis direction and propose relevant and impactful recommendations



Data cleaning



1

Modified timestamp_call_key

- When and where the customer called
- Only have calls from either Dallas or Phoenix
- We excluded call location information from the column

2

Filtered account_status

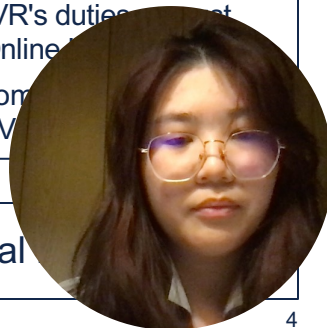
- Calls with certain types of account status (e.g. B - Bankruptcy) are supposed to speak to an agent
- We excluded those types of calls from data analysis since no room to avoid floor calls

3

Filtered mos

- Options selected by customers throughout the call
- Certain service options are outside IVR's duties (e.g. transfer call to an agent (e.g. LW – Online))
- We excluded those types of calls from data analysis since they generate insights most relevant to IVR

Cleaning data allows us to effectively focus data most relevant to solving the central



Attributes selection

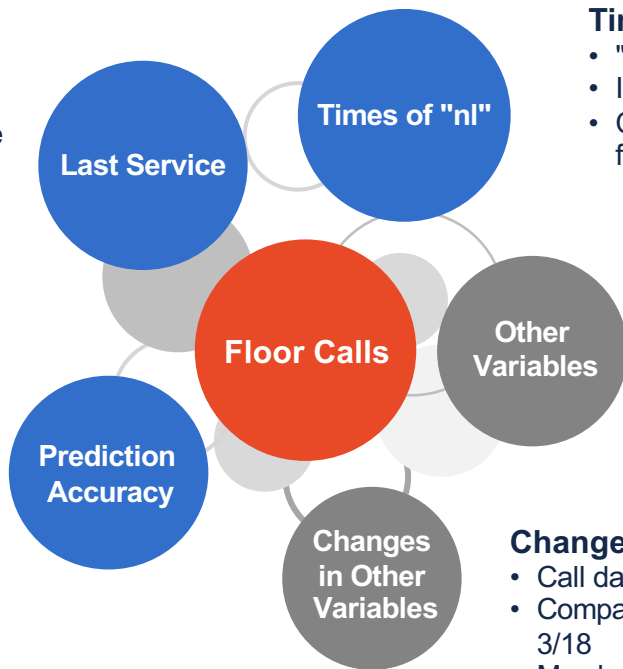


Last service chosen in a call

- Last code from mos except "TR"
- Indicates which service customers are truly looking into
- Can yield insights on which IVR service leads to most floor cases and should be improved

Accuracy of call reason prediction

- Compare last service chosen in a call with call reason predicted
- Can yield insights on if increasing prediction accuracy can help reduce floor calls



Times of "nl" appeared in mos

- "nl" represents natural language function of IVR
- Indicates the effectiveness of NL function
- Can yield insights on if the effectiveness of NL functions associates with floor cases

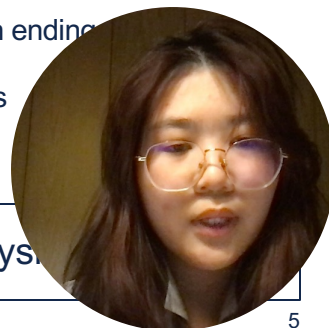
Account related info

- Account balance, account open date, eBill enrollment status, auto-pay enrollment status etc.
- May have patterns with floor cases

Changes in account related info

- Call dates range from 3/13 to 3/17
- Compare initial status on 3/13 with ending 3/18
- May have patterns with floor cases

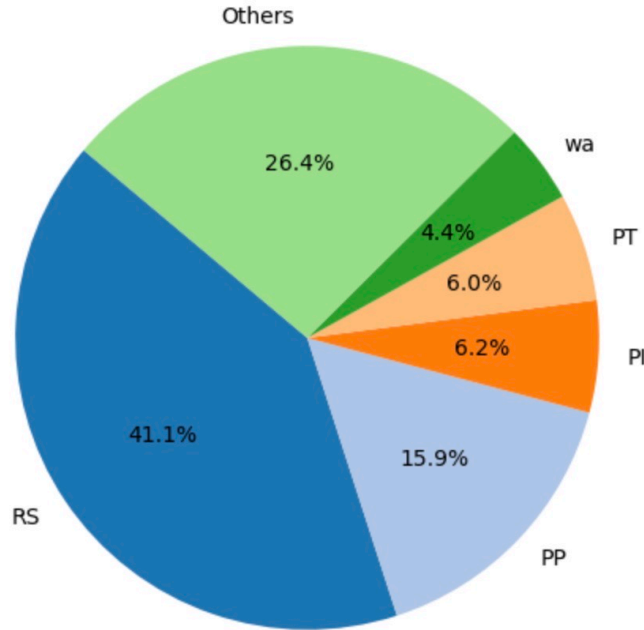
Selecting appropriate attributions can help us have effective plan for data analysis.



Association results - last service vs. floor calls



Floor Cases Distribution by Last service (Top 5)

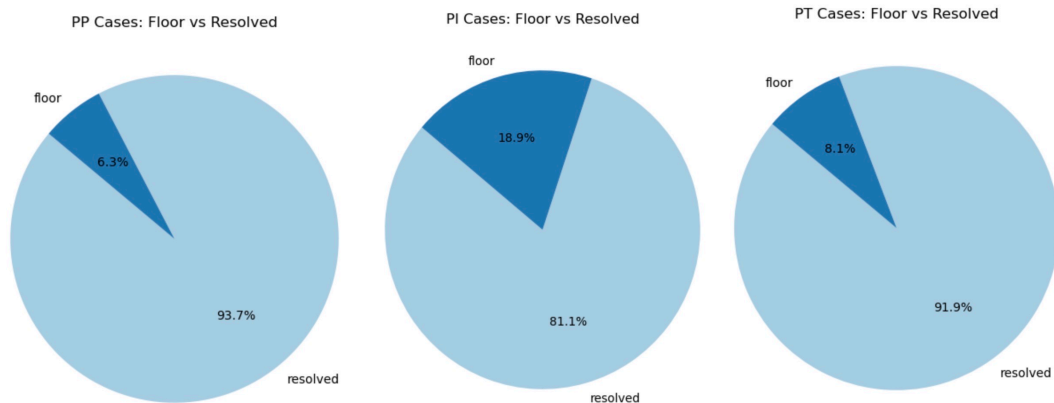


1. RS (Global Router)
2. PP (PBP Predictive)
3. PI (Proactive Income)
4. PT (PBP Request)
5. wa (Request Waiver)

Most floor cases are transferred from Global Router, PBP services, Proactive Income, and Waiver IVR services



Association results - last service vs. floor calls



Have high resolved cases

- PP & PT (PBP service), PI (Proactive Income)
- Per service has great performance in resolving call reasons
- Ranked high in total floor cases due to the large call bases
- Not first priority to address

Recommendations

- Existing IVR channel of choices for PP, PT, PI should not change
- Survey true call reason of floor call on related to PP, PT, PI
- Add functions into channel of choices based on survey results

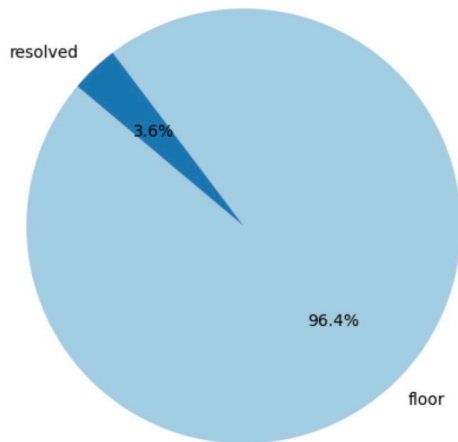
Although PP, PI, PT yields high floor call cases, they are not in the first priority to address



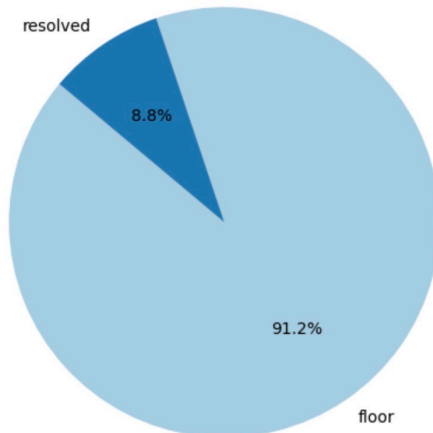
Association results - last service vs. floor calls



RS Cases: Floor vs Resolved



wa Cases: Floor vs Resolved



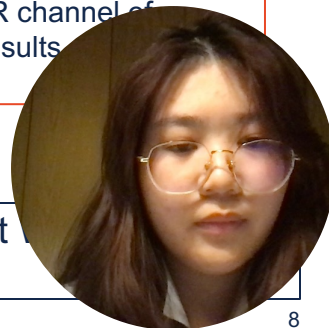
Have low resolved cases

- RS (Global Router), wa (Request Waiver)
- Per service has poor performance in resolving call reasons
- First priority to improve

Recommendations

- Survey true call reason of floor call cases related to RS & wa
- Modify current RS & wa IVR channel of choices based on survey results

Synchrony should focus on rearranging IVR options for Global Router and Request Waiver services when reducing floor calls

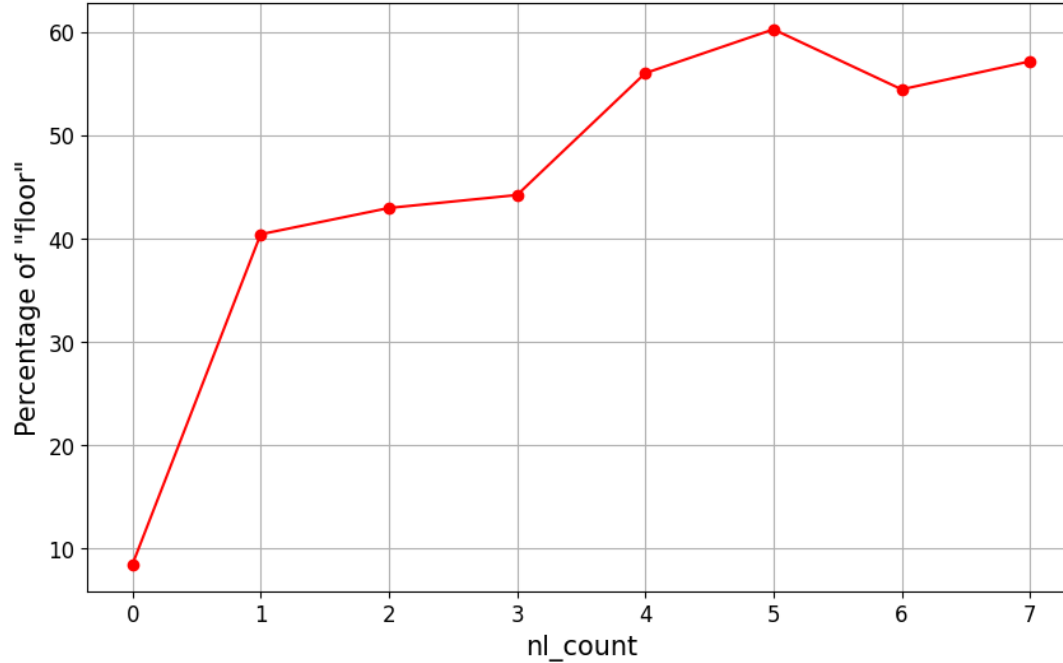


Association results – time of nl vs. floor cases

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Will user enter nl menu increase floor calls?



Insights

Calls entered into natural language function more time would be more likely to go into floor

Synchrony should improve natural language function to more effectively direct customers
IVR services



Association results – prediction accuracy vs. floor cases



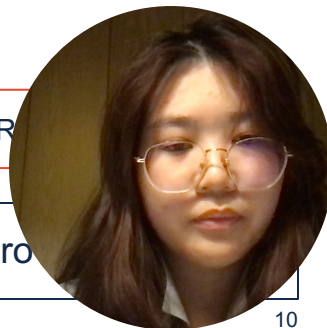
1 Average prediction accuracy = 57.31%

2

Last Service	Prediction Accuracy%	Total Floor%
RS	0.06%	41.1%
PP	67.60%	15.9%
PI	4.15%	6.2%
PT	98.42%	6.0%
wa	99.64%	4.4%

3 The prediction model has poor performance on predicting Global Router and Proactive Income IVR

The prediction model toward Global Router and Proactive Income should be improved



Association results – account status info vs. floor cases



Logit Regression Results							
Dep. Variable:	true_resolved	No. Observations:	1678159				
Model:	Logit	Df Residuals:	1678156				
Method:	MLE	Df Model:	2				
Date:	Sat, 23 Mar 2024	Pseudo R-squ.:	0.0003140				
Time:	23:22:55	Log-Likelihood:	-8.3339e+05				
converged:	True	LL-Null:	-8.3365e+05				
Covariance Type:	nonrobust	LLR p-value:	2.050e-114				
	coef	std err	z	P> z	[0.025	0.975]	
const	1.3383	0.004	375.997	0.000	1.331	1.345	
account_balance_13_march		2.781e-06	9.9e-07	2.808	0.005	8.4e-07	4.72e-06
no_of_accounts_with_syf_13_march		0.0124	0.001	22.545	0.000	0.011	0.014

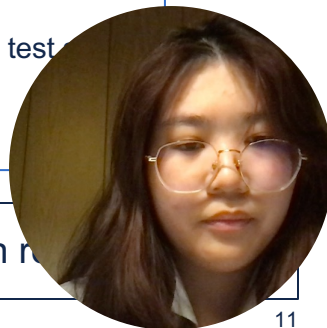
Chi-square test for account_open_date_13_march: chi2 = 48102.121143578486, p-value = 0.0
Chi-square test for account_status_13_march: chi2 = 6663.083183786851, p-value = 0.0
Chi-square test for card_activation_status_13_march: chi2 = 7732.280473827364, p-value = 0.0
Chi-square test for eservice_ind_13_march: chi2 = 8199.503438400801, p-value = 0.0
Chi-square test for ebill_enrolled_status_13_march: chi2 = 28714.097361367716, p-value = 0.0
Chi-square test for auto_pay_enrolled_status_13_march: chi2 = 6690.8999617697555, p-value = 0.0

Insights

- Coefficients are around 0
- Correlations are too slight to consider

- Although p values < 0.05 indicates that there are correlations, we decided not to trust the test results
- Fallacy might exist in the test as all the p values equal 0.0

We did not find any correlations between account status info and the call resolution rate



Association results – change in account status info vs. floor cases

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Logit Regression Results							
=====							
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converged:	True	LL-Null:	-8.3365e+05				
Covariance Type:	nonrobust	LLR p-value:	2.050e-114				
=====							
	coef	std err	z	P> z	[0.025	0.975]	

const	1.3383	0.004	375.997	0.000	1.331	1.345	
account_balance_13_march	2.781e-06	9.9e-07	2.808	0.005	8.4e-07	4.72e-06	
no_of_accounts_with_syf_13_march	0.0124	0.001	22.545	0.000	0.011	0.014	
=====							

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Insights

Changes in number of accounts hold has negative correlation with if leading to floor cases

Change in account status, in card activation status, in eService enrollment, and in eBill enrollment have relationships with if leading floor cases

Synchrony can further explore on the correlations between change in account status info and call resolution results



Thank you!

