BUSINESS INSIGHTS FROM TELCO CUSTOMER TICKETS

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10. Dashboards & Charts to Visualize the data and give insights.
11. Executive Summary of Business Problem and Suggestion/Solution proposed.
12. Recommendation and lesson's learnt from the project

SYNOPSIS:

Project is based on telco customer complaint public dataset of complaints raised [i.e SR Raised].
This project is completely based on customer feedback of telco service and giving suggestion to telco provider to become more of customer centric apart from giving service's and leading them to higher market potential w.r.t competitor.

This dataset corresponds to SR ID, SR Type, Technology Type, SR raised Date, Resolution date, SLA Time, SR Source Type, Customer Account type, Customer details like Name, Address, Customer Type, Area, Geo Lat & Long etc.

Using this data, we intend to analyze SR trends over a given Time period, Average SR raised & time spends for resolutions, delivery performance patterns, Source of SR along with Customer type and Geo location and impact on Business and customer.

The goal behind is to 'put it all together' by developing a Coherent, Concise, and Realistic analysis in the form of a report and give business insights from customer tickets and further scope for improvement in that domain with strong suggestion and recommendations.

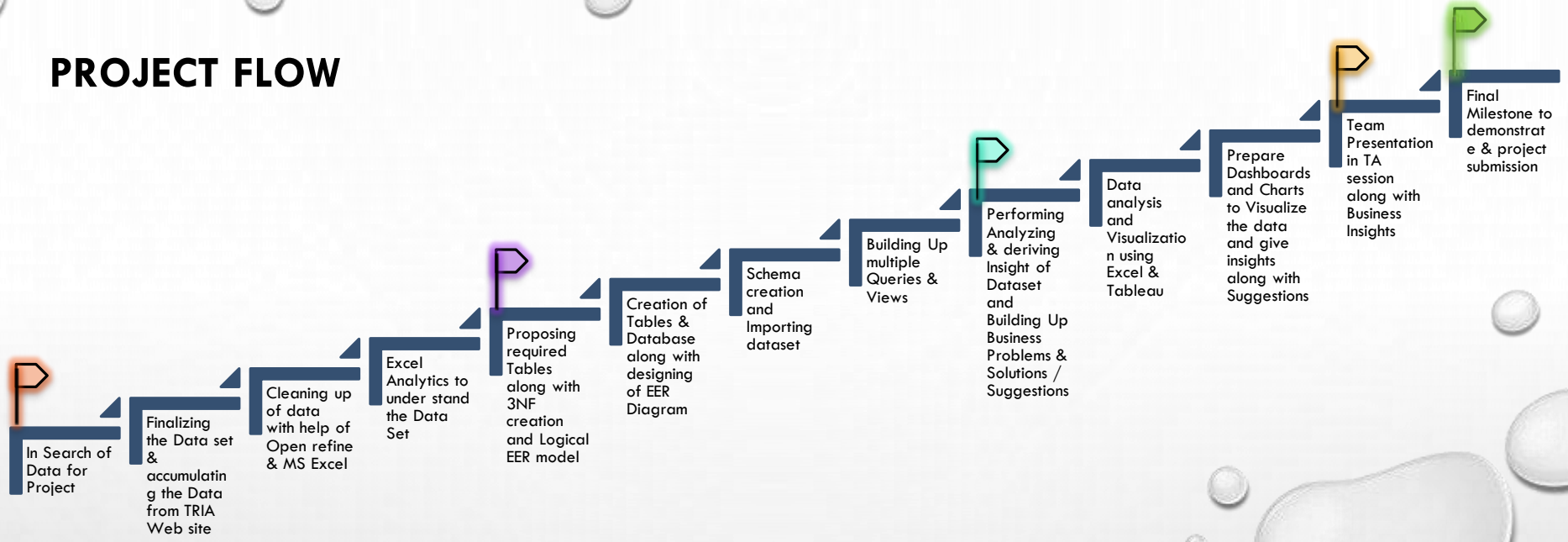
GOAL : Prime goal is to analyze Service Request [SR's] data and come up with actionable insights based on the data, to improve service quality, customer satisfaction which overall enhance business

METHODOLOGY AND TOOLS USED

Service Request data is available on https://data.gov.in – **TRIA web site** in form of CSV files containing various customer's raised complaints along with necessity information, Complaint type and technology, Customer class (Gold, silver, corporate etc.), SLA and other dimensions

Work Task	Tools Used
Cleanup the CSV data (Remove unwanted & Blank fields, sanitize/format some of them such as Zip codes, Address, Names, Lat-Long)	MS Excel
	Open Refine
Design EER diagrams and various analysis dimensions (such as Customer & source Type, Technology, SLA and SR Status along with Geo Lat-Long)	My SQL Workbench
Create database and Tables based on the ER diagram	My SQL Workbench
Create Schema and Import the Telco Data inside the tables via Insert Command	My SQL Workbench & MS Excel
Commanding Queries and Views to gather insights from the Telco data, Analyze the data and conclude for Business Problems and Way forward	My SQL Workbench
Prepare Dashboards and Charts to Visualize the data and give and share insights	Tableau
	MS Office

PROJECT FLOW



EXECUTIVE SUMMARY :: OBSERVATIONS

Based on Data Analysis done for Telco Service Requests:

- No. of Complaints raised by the customer are into declining trend over the time and ~>=50% SR's raised case are still under Open/On-Hold category i.e Un-resolved
- ~61% of Customer SR's are for Voice issues & 35% for Data issues and ~4% for other issues
- Major chunk in Voice is 3G Voice [54% w.r.t Total Voice Complaints] and in Data is 4G Data [91% w.r.t Total Data Complaints]
- 87% SR's raised are from Customer type : Gold and Type : Platinum – 13%
- 73% SR's are from Customer class : Induvial, followed by ~26% from Customer class : Corporate/Medium/Micro & Small enterprise
- 46% Issues reported via Source Type : Toll Free Telco Call Center Channel.
  8% Issues are reported via Source Type : Social media → Major chunk is via Twitter [~50%]
- ~48% cases under the SR category : Resolved, are been resolved <=5 days [SLA]

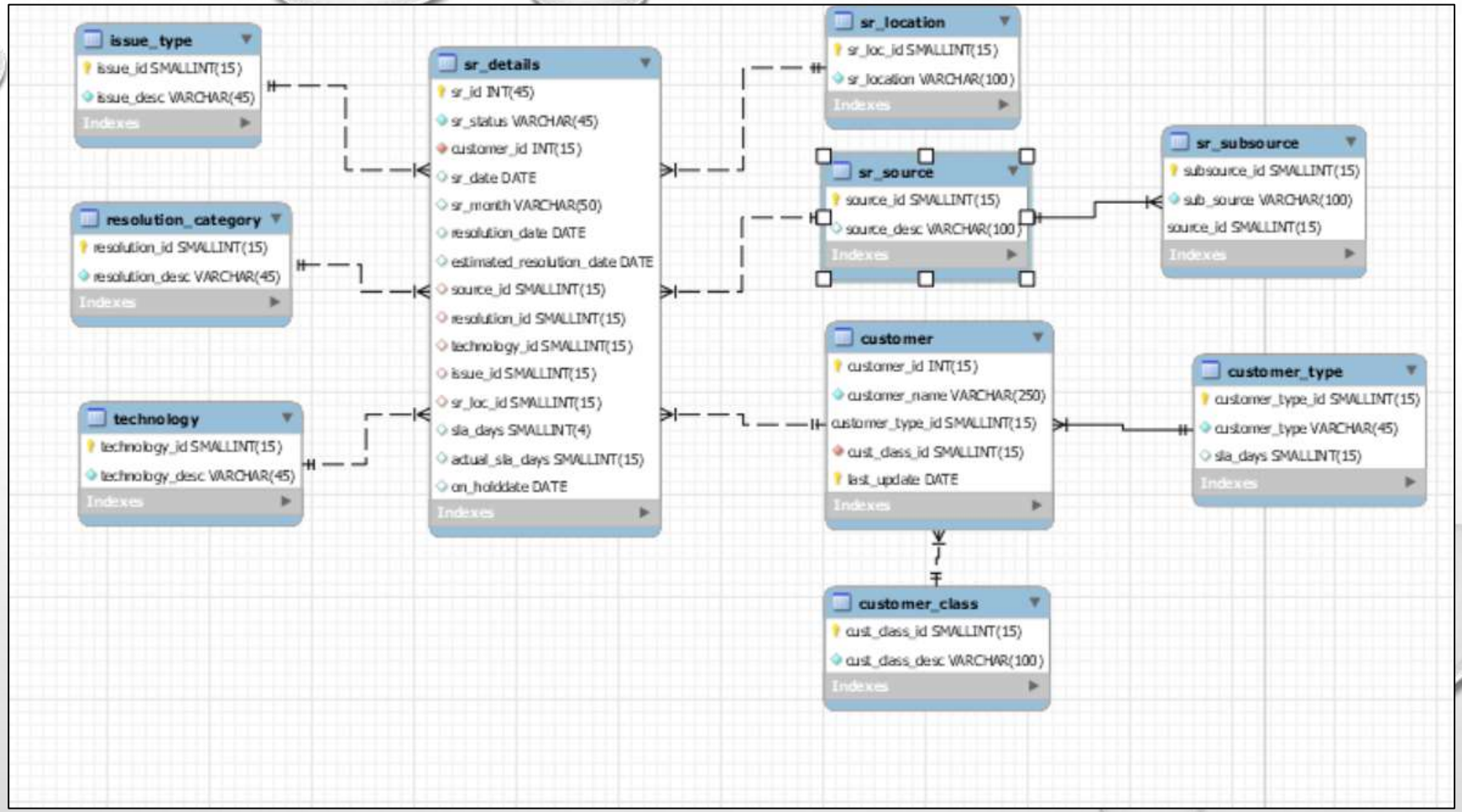
OBJECTIVE : UNDERSTANDING THE BUSINESS PROBLEM :

Deep dive on SR's and suggesting reduction opportunity along with insights, so that company has opportunity to have higher customer satisfaction index which helps in leading them for higher market potential [Customer and revenue wise] w.r.t other competitor.

1. No. of SR’s vs Technologies vs Issue Type.
2. No. of SR’s vs Source Type and Sub-Category
3. No. of SR’s vs Customer Type and class
4. No. of SR’s vs Locations vs SR’s status
5. No. of SR’s vs SR’s status vs SLA days

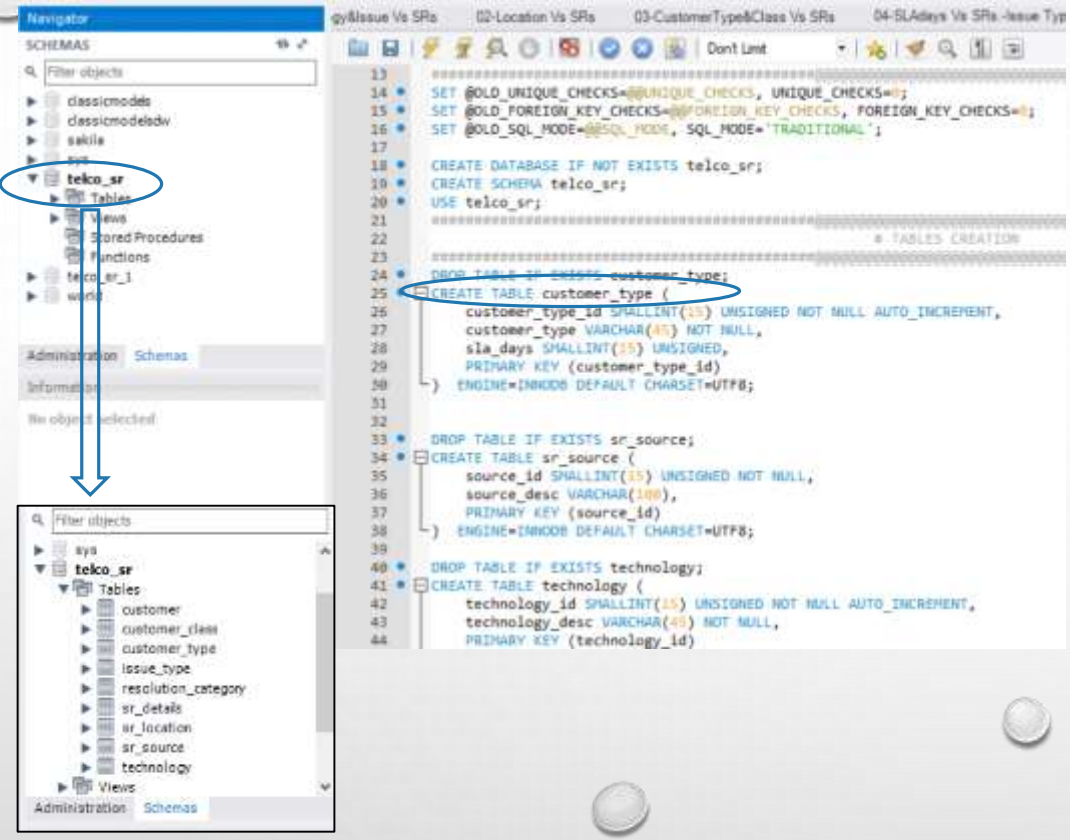
MY SQL BASED ANALYSIS

Logical EER Diagram



How Schema & Tables Created and Data was Inserted

Schema creation



Insert the data base

```
INSERT customer_class values
(1,'Corporate'),
(2,'Gold'),
(3,'Individual'),
(4,'Key'),
(5,'Medium Enterprise'),
(6,'Micro'),
(7,'Small Enterprise'),
(8,'Test Card'),
(9,'Platinum'),
(10,'Solitaire');

INSERT sr_location values
(1,'Colaba, Nariman Point'),
(2,'Marine Lines'),
(3,'Grant Road, Mumbai Central, Tardeo'),
(4,'Bhyculla, Dockward'),
(5,'Lower Parel, Worli'),
(6,'Wadala, Dadar, Sewri, Matunga'),
(7,'Bandra, Khar'),
(8,'Dharavi, Sion'),
(9,'Santacruz'),
(10,'Kurla, Chunnabhatti'),
(11,'Juhu, Vile Parle, Andheri East'),
(12,'Jogeshwari, Andheri MIDC, Saki Naka'),
(13,'Goregaon East &  West'),
(14,'Malad East & West'),
```

Use of Joints and View for Queries and linking data with Tableau

Use of Joints & Views

1

```
FROM
    (SELECT
        concat(t.technology_desc,"-" ,it.issue_desc) as Issue_type,
            COUNT(sd.sr_id) AS total_sr
    FROM
        sr_details sd
    LEFT JOIN technology t ON sd.technology_id = t.technology_id
    LEFT JOIN issue_type it ON sd.issue_id = it.issue_id
    GROUP BY t.technology_desc , it.issue_desc) AS a,
    (SELECT
        COUNT(*) AS total
    FROM
        sr_details) AS b
ORDER BY total_sr desc
;
```

2

```
create or replace view vw_count_all as
select 0 as issue_id, sr_month,
count(sr_id) as Total_Srs,
sum(case when sr_status = "Resolved" then 1 else 0 end) as Resolved_Srs,
sum(case when sr_status = "Resolved" then 1 else 0 end)/count(sr_id) *100 as Resolved_srs_percent,
sum(case when sr_status = "Resolved" and on_holddate > 0 then 1 else 0 end) as Resolved_with_hold_Srs,
sum(case when sr_status = "Resolved" and on_holddate > 0 then 1 else 0 end)/count(sr_id) *100
                                                                                  as Resolved_with_hold_Srs_percent,

(sum(case when sr_status = "Resolved" then 1 else 0 end))
- (sum(case when sr_status = "Resolved" and on_holddate > 0 then 1 else 0 end)) as Resolved_with_no_hold_Srs,
((sum(case when sr_status = "Resolved" then 1 else 0 end))
- (sum(case when sr_status = "Resolved" and on_holddate > 0 then 1 else 0 end)))/count(sr_id) *100
                                                                                  as Resolved_with_no_hold_Srs_percent

from sr_details
group by sr_month
order by sr_month;

select * from vw_count_all;
```

3

Example 1 - SQL Queries along with Output

Query : Technology - Issue type bifurcation w.r.t total SR's

```
SELECT
    a.*, 100 * a.total_sr / b.total AS percent_sr
FROM
    (SELECT
        concat(t.technology_desc,"-" ,it.issue_desc) as Issue_type,
            COUNT(sd.sr_id) AS total_sr
    FROM
        sr_details sd
    LEFT JOIN technology t ON sd.technology_id = t.technology_id
    LEFT JOIN issue_type it ON sd.issue_id = it.issue_id
    GROUP BY t.technology_desc , it.issue_desc) AS a,
    (SELECT
        COUNT(*) AS total
    FROM
        sr_details) AS b
ORDER BY total_sr desc
;
```

Query : Matrix between Technology and Issue type

```
SELECT t.technology_desc,
    sum(case when  it.issue_desc like "Vo%" then 1 else 0 end) as Voice_issue,
     sum(case when  it.issue_desc = "Data_Issues" then 1 else 0 end) as Data_Issues,
     sum(case when  it.issue_desc
     in("Roaming_issues", "Other_issues") then 1 else 0 end) as Other_Issues,
    COUNT(sd.sr_id) AS total_sr
    FROM
        sr_details sd
       LEFT JOIN technology t ON sd.technology_id = t.technology_id
    LEFT JOIN issue_type it ON sd.issue_id = it.issue_id
   GROUP BY  t.technology_desc

ORDER BY  total_sr  desc;
```

Output

Issue_type	total_sr	percent_sr
3G-Voice_issue	27427	32.6279
4G-Data_Issues	27070	32.2032
4G-VoLTE_issue	13956	16.6024
2G-Voice_issue	9587	11.4049
Roaming_issues-Roaming_issues	3012	3.5832
3G-Data_Issues	2523	3.0014
Other_issues-Other_issues	485	0.5770

Output

technology_desc	Voice_issue	Data_Issues	Other_Issues	total_sr
4G	13956	27070	0	41026
3G	27427	2523	0	29950
2G	9587	0	0	9587
Roaming_issues	0	0	3012	3012
Other_issues	0	0	485	485

Example 2 - SQL Queries along with Output

Query : Source Type vs No. of SR

```sql
SELECT
    source_desc, COUNT(source_id)
FROM
    sr_details
        LEFT JOIN
    sr_source USING (source_id)
GROUP BY source_id
ORDER BY source_id desc;
```

Output

source_desc	COUNT(source_id)
VIP_escalation	1153
Port_Out_Threat-retention_desk	16205
Social_Media	6542
3rd_Party_Retail_Stores	9228
Telco_Stores	6525
Corporate_Account_issue	2978
Telco_Toll_Free_Call_Center	38536
Telco_Road_Survey	2893

Query : Customer Class vs No. of SR's

```sql
SELECT
    a.*, (100 * a.total_sr / b.total) AS percent_sr
FROM
    (SELECT c2.cust_class_desc, COUNT(sr_id) AS total_sr
    FROM sr_details sd
    LEFT JOIN (SELECT c.customer_id,c.last_update,cc.cust_class_desc,c.cust_class_id
                FROM customer c
            LEFT JOIN customer_class cc ON c.cust_class_id = cc.cust_class_id) AS c2
    ON sd.Customer_id = c2.customer_id AND sd.sr_date = c2.last_update
    GROUP BY c2.cust_class_desc) a,
    (SELECT COUNT(*) AS total FROM sr_details) AS b
ORDER BY total_sr desc;
```

Output

cust_class_desc	total_sr	percent_sr
Individual	61561	73.2346
Corporate	13025	15.4949
Micro	3374	4.0138
Small Enterprise	2990	3.5570
Medium Enterprise	2525	3.0038
Key	338	0.4021
Gold	201	0.2391
Platinum	26	0.0309
Test Card	19	0.0226
Solitaire	1	0.0012

Example 3 - SQL Queries along with Output

Query : Month on Month SR's vs SR Status distribution

```
create or replace view vw_count_all as
select 0 as issue_id, sr_month,
count(sr_id) as Total_Srs,
sum(case when sr_status = "Resolved" then 1 else 0 end) as Resolved_Srs,
sum(case when sr_status = "Resolved" then 1 else 0 end)/count(sr_id) *100 as Resolved_srs_percent,
sum(case when sr_status = "Resolved" and on_holddate > 0 then 1 else 0 end) as Resolved_with_hold_Srs,
sum(case when sr_status = "Resolved" and on_holddate > 0 then 1 else 0 end)/count(sr_id) *100
                                                                                  as Resolved_with_hold_Srs_percent,
(sum(case when sr_status = "Resolved" then 1 else 0 end))
- (sum(case when sr_status = "Resolved" and on_holddate > 0 then 1 else 0 end)) as Resolved_with_no_hold_Srs,
((sum(case when sr_status = "Resolved" then 1 else 0 end))
- (sum(case when sr_status = "Resolved" and on_holddate > 0 then 1 else 0 end)))/count(sr_id) *100
                                                                                  as Resolved_with_no_hold_Srs_percent
from sr_details
group by sr_month
order by sr_month;

select * from vw_count_all;
```

Output

sr_month	Total_Srs	Resolved_Srs	Resolved_srs_percent	Resolved_with_hold_Srs	Resolved_with_hold_Srs_percent	Resolved_with_no_hold_Srs	Resolved_with_no_hold_Srs_percent
201804	15157	10989	72.5012	6507	42.9307	4482	29.5705
201805	10619	7225	68.0384	4388	41.3222	2837	26.7163
201806	12103	6850	56.5975	3354	27.7121	3496	28.8854
201807	14343	7129	49.7037	2779	19.3753	4350	30.3284
201808	9812	4506	45.9234	1754	17.8761	2752	28.0473
201809	7995	2572	32.1701	555	6.9418	2017	25.2283
201810	9112	2119	23.2550	39	0.4280	2080	22.8270
201811	4919	643	13.0718	0	0.0000	643	13.0718

Query : Month on Month SR's vs SR's Location

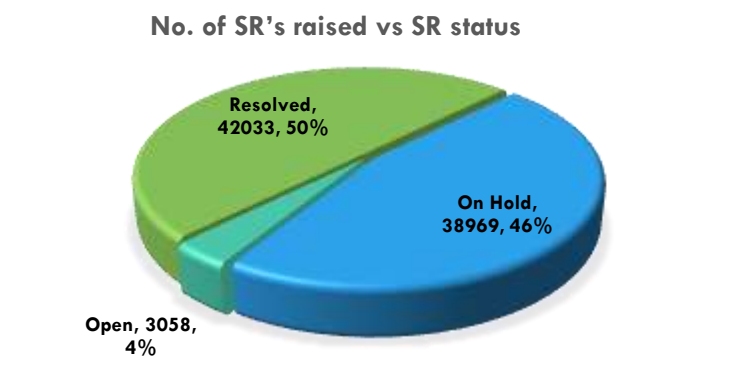
```
SELECT a1.sr_loc_id,a2.sr_location,
sum(case when year(sr_date)*100+month(sr_date) = 201804 then 1 else 0 end) as  Apr2018,
sum(case when year(sr_date)*100+month(sr_date) = 201805 then 1 else 0 end) as  May2018,
sum(case when year(sr_date)*100+month(sr_date) = 201806 then 1 else 0 end) as  Jun2018,
sum(case when year(sr_date)*100+month(sr_date) = 201807 then 1 else 0 end) as  Jul2018,
sum(case when year(sr_date)*100+month(sr_date) = 201808 then 1 else 0 end) as  Aug2018,
sum(case when year(sr_date)*100+month(sr_date) = 201809 then 1 else 0 end) as  Sep2018,
sum(case when year(sr_date)*100+month(sr_date) = 201810 then 1 else 0 end) as  Oct2018,
count(sr_id) as Total
from sr_details as a1 left join sr_location as a2 using (sr_loc_id)
where sr_status in ("Resolved") and year(sr_date)*100+month(sr_date) <= 201810
group by a1.sr_loc_id,a2.sr_location
order by Total desc;
```

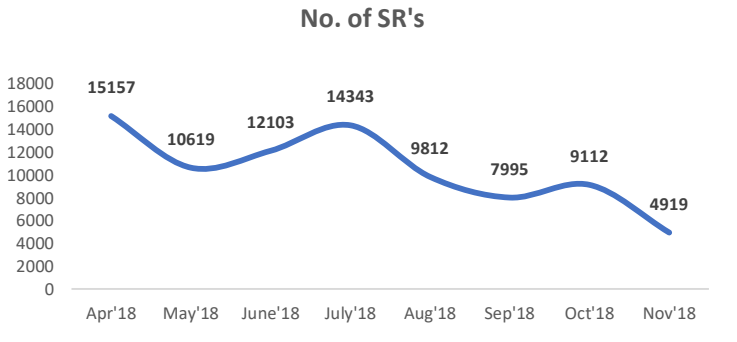
Output

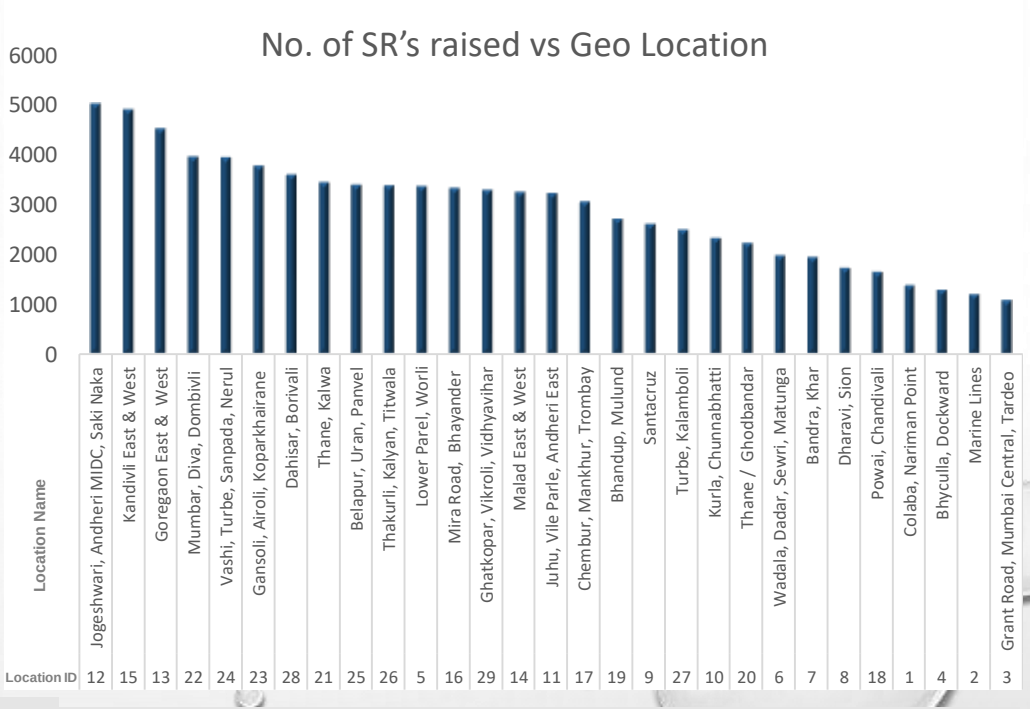
sr_loc_id	sr_location	Apr2018	May2018	Jun2018	Jul2018	Aug2018	Sep2018	Oct2018	Total
12	Jogeshwari, Andheri MIDC, Saki Naka	671	493	419	426	282	165	144	2600
15	Kandivli East & West	612	382	433	388	258	135	111	2319
13	Goregaon East & West	562	387	398	370	275	136	122	2250
23	Gansoli, Airoli, Koparkhairane	540	363	343	419	222	112	114	2113
22	Mumbar, Diva, Dombivli	491	369	337	402	203	96	80	1978
24	Vashi, Turbe, Sanpada, Nerul	545	317	303	315	220	143	91	1934
5	Lower Parel, Worli	439	343	282	277	185	98	126	1750
28	Dahisar, Borivali	517	275	279	289	187	108	84	1739
26	Thakurli, Kalyan, Titwala	442	265	338	306	166	86	135	1738
16	Mira Road, Bhayander	458	295	259	266	174	115	81	1648

EXCEL ANALYSIS TO UNDERSTAND SQL OUTPUT DATA AND BUILD UP STORIES

1. Excel Analytics and Data Insight







Highs :

- No. of SR's Month on Month is into **decreasing trend.**
- **50%** SR's raised by customer has status is Resolved

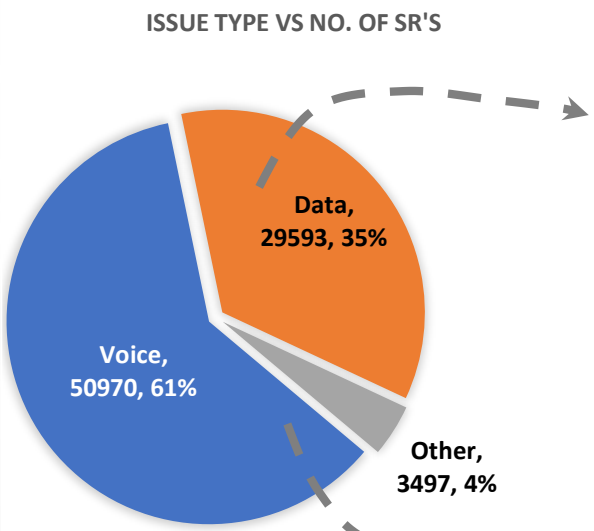
Lows :

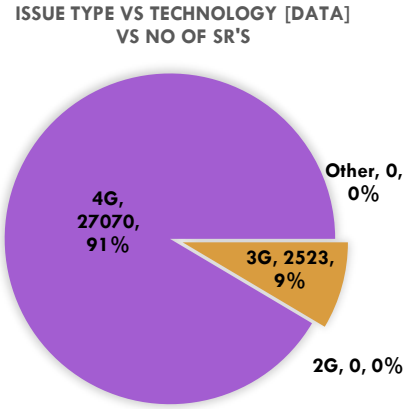
46% SR's are attended but still not resolved [On-Hold], rest **4%** still Open

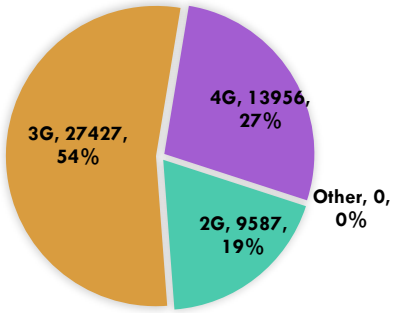
Highs : Location ID 1 to 4 :: Lowest SR's :: High Customer Satisfaction Index

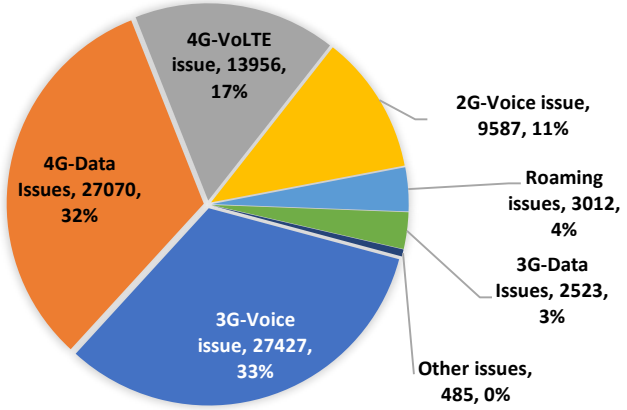
Lows : Location ID 12, 13 & 15 :: Highest SR's :: Low Customer Satisfaction Index

2. Excel Analytics and Data Insight









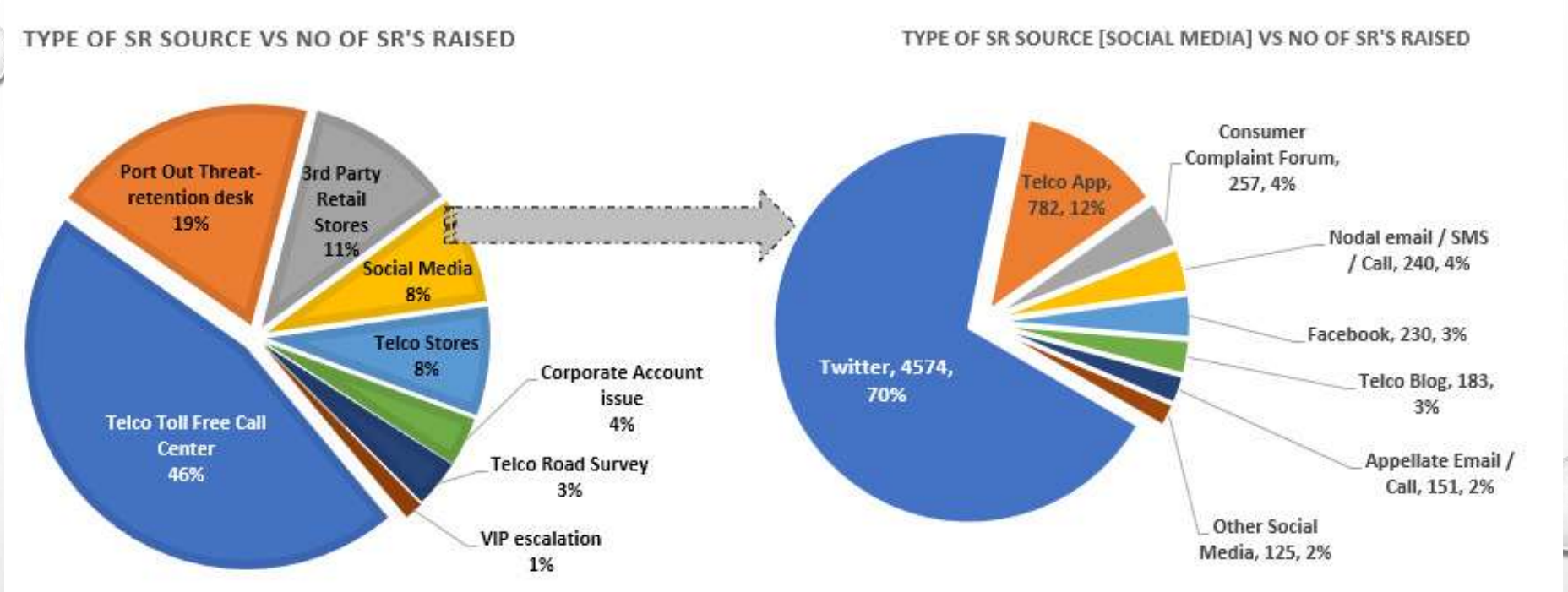
Lows [Technology & Issues] :

3G – Voice [33%] & 4G – Voice [17%] & 4G – Data [32%] is Major Chuck for Voice & Data related issues respectively.

Highs :

- 2G Voice has very less contribution, which say that majority of customers are using smart phone.
- Roaming issue is very rarely reported, hence there is no intra-inter roaming issues.

3. Excel Analytics and Data Insight



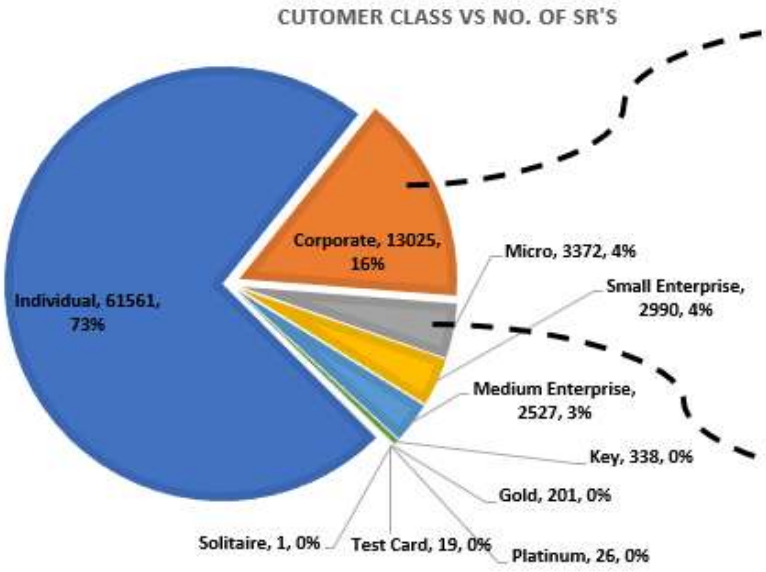
Highs :

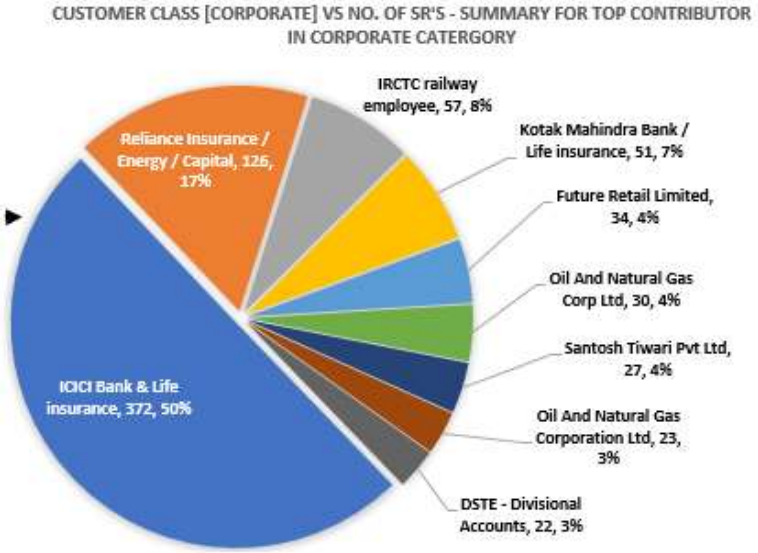
- **~1%** SR's are obtain via Source Mode : VIP escalation

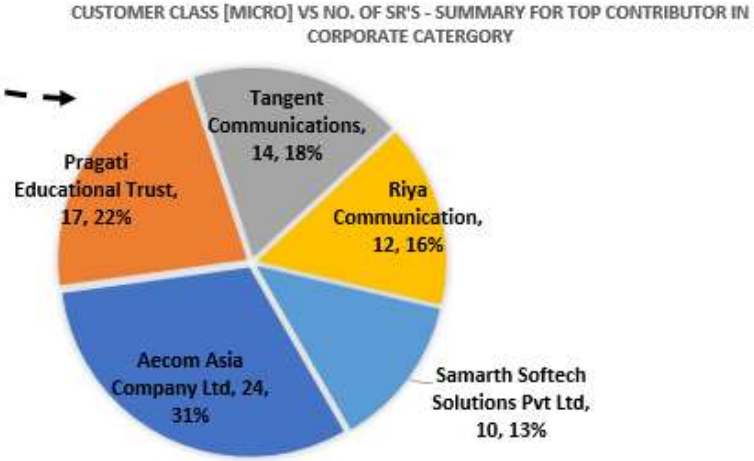
Lows :

- **19%** SR's are reported :: Source :: **Port Out Threat desk,** need special attention to avoid churn out to competitor & loss of revenue
- **8%** SR's are reported :: Source :: Social Media, Major chunk from Twitter [**70%**]

4. Excel Analytics and Data Insight







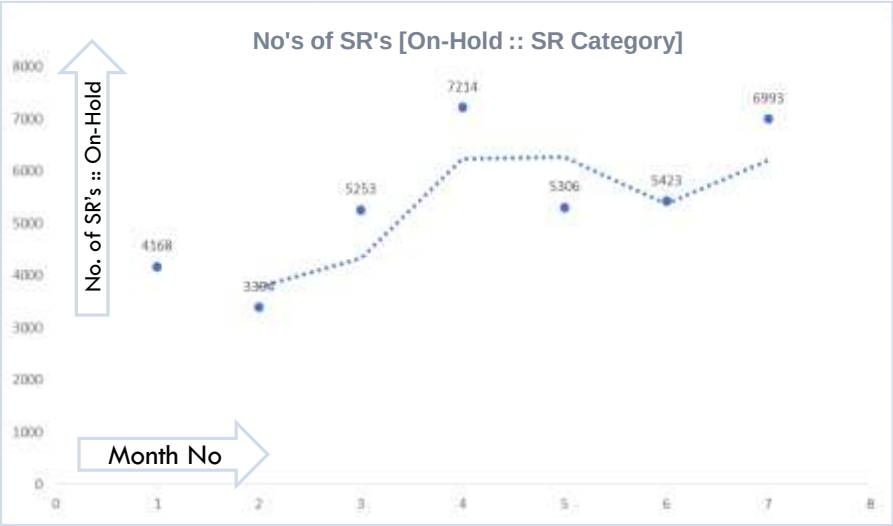
Highs :

- **<1%** SR's are raised by Solitaire / Platinum customer's.

Lows :

- **73%** SR's are raised by individual's
- **27%** SR's are raised by Corporate's / Small Enterprise or sectors, need special attention to avoid churn out to competitor.

5. Excel Analytics and Data Insight



Highs :

- **48%** SR's under **Resolved** category have <=5 days SLA days.
- **2 to 4 Days** is the average SLA days.

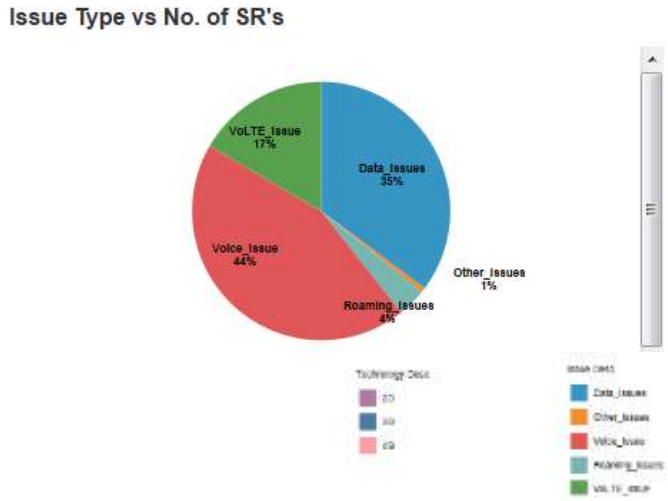
Lows :

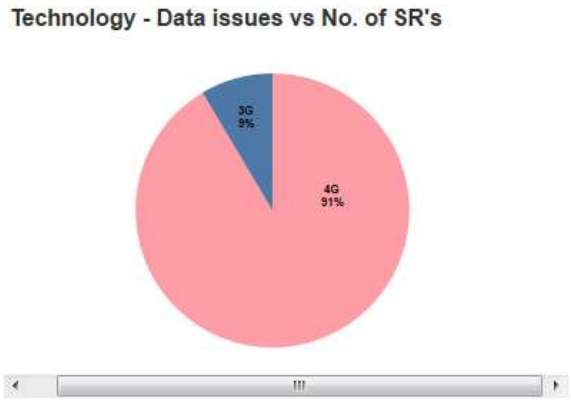
- **Minimize SLA days,** should target >=8 days SLA days [**39%**].
- Month on Month - **Increasing Trend -** No. of SR's under SR Status :: On-Hold.

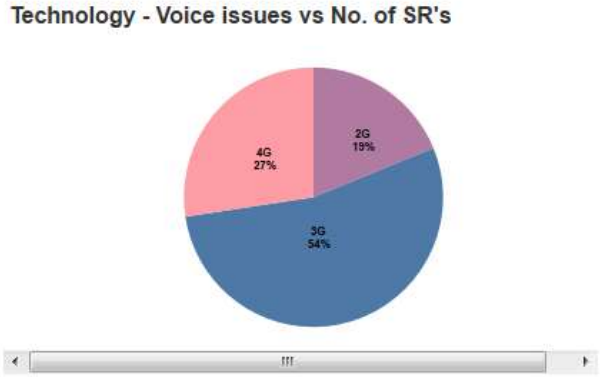
DATA ANALYSIS, VISUALIZATION AND STORY MAKING USING TABLEAU

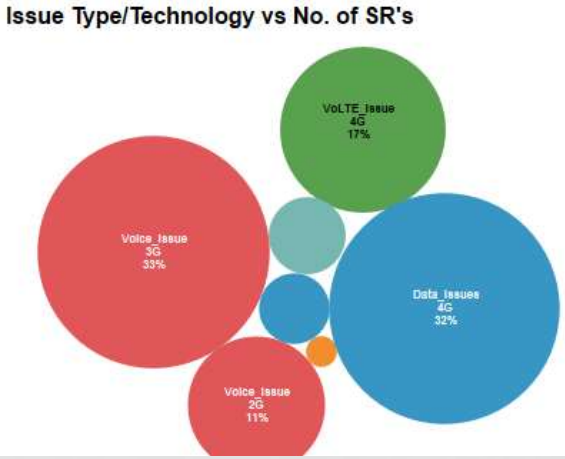
Note : In these section we tried to compare & make Charts/Story as similar to that of SQL output and Excel charts

1. Business Problem : To acknowledge which service's across technology is doing well & the most frequent issue type faced by the customer which needs attention.









Observation :

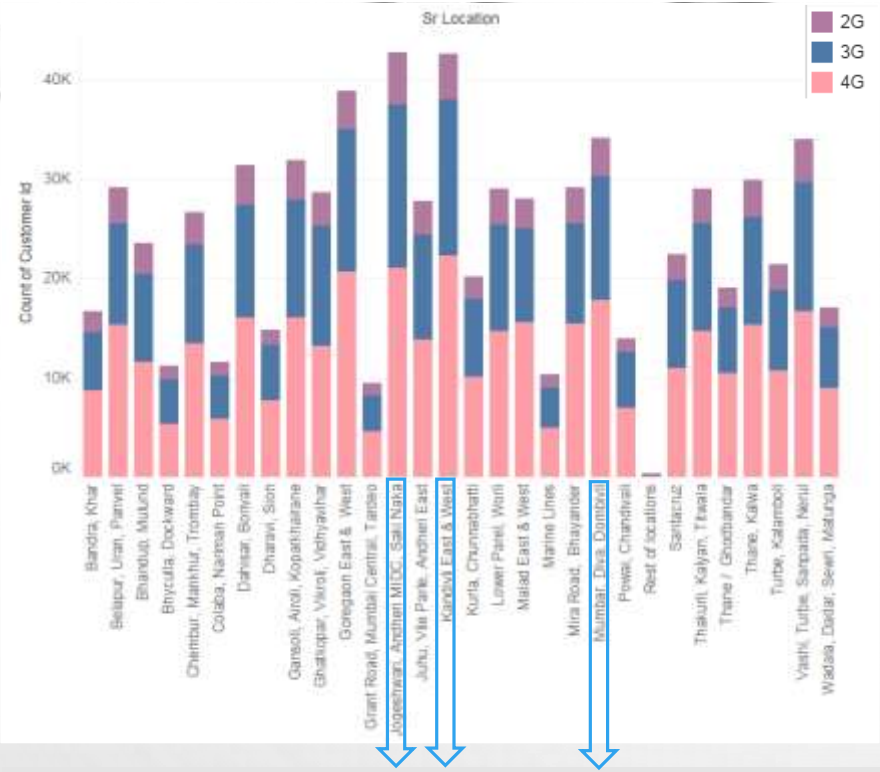
Highs :

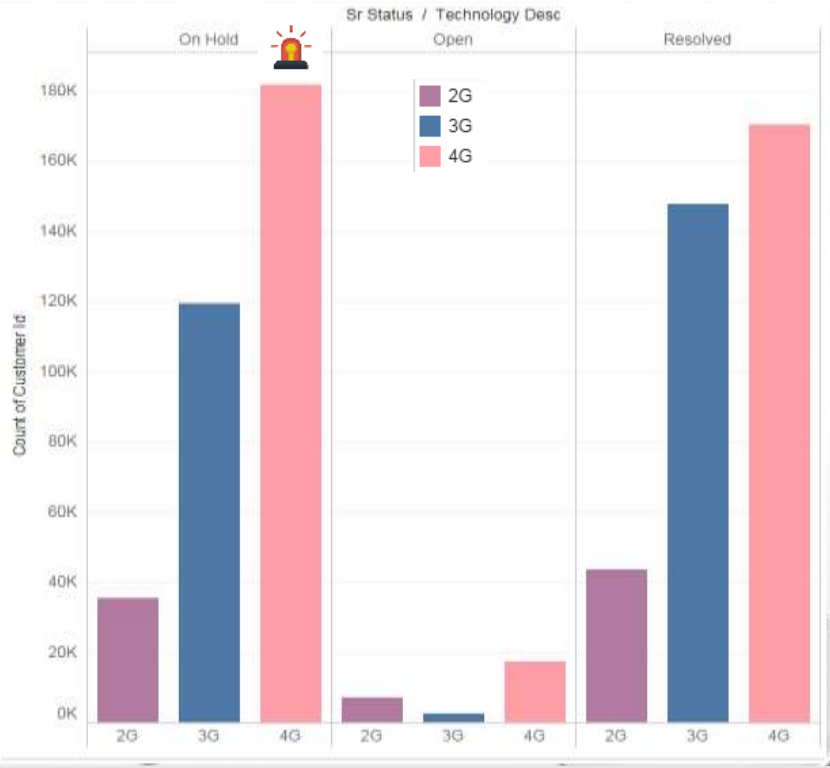
- 2G Voice has very less contribution, which say that majority of customers are using smart phone.
- Roaming issue is very rarely reported, hence there is no intra-inter roaming issues.

Lows :

3G – Voice [33%] & 4G – Voice [17%] & 4G – Data [32%] is Major Chuck for Voice & Data related issues respectively.

1. Business Problem : To acknowledge which service's across technology is doing well & the most frequent issue type faced by the customer which needs attention. [Continue……..]

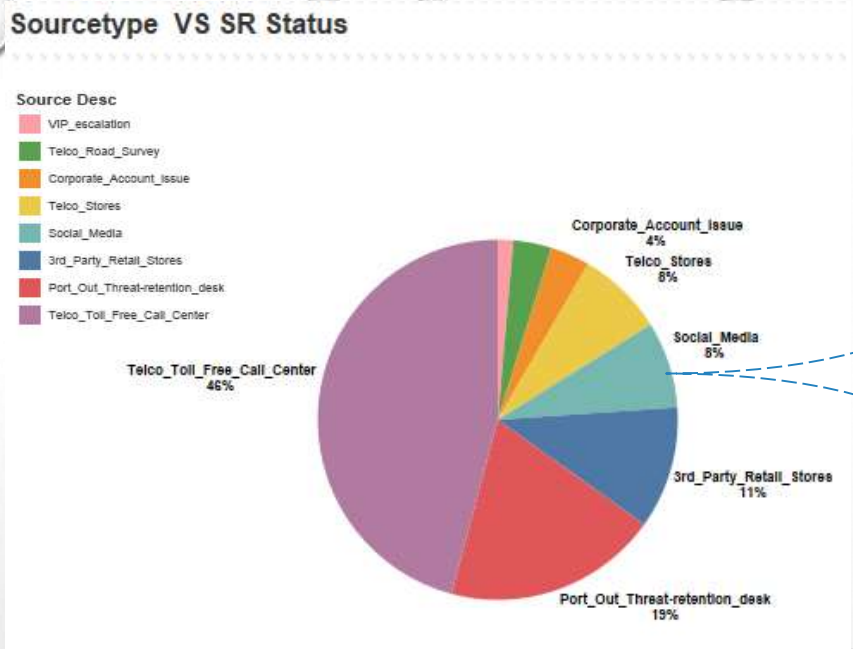


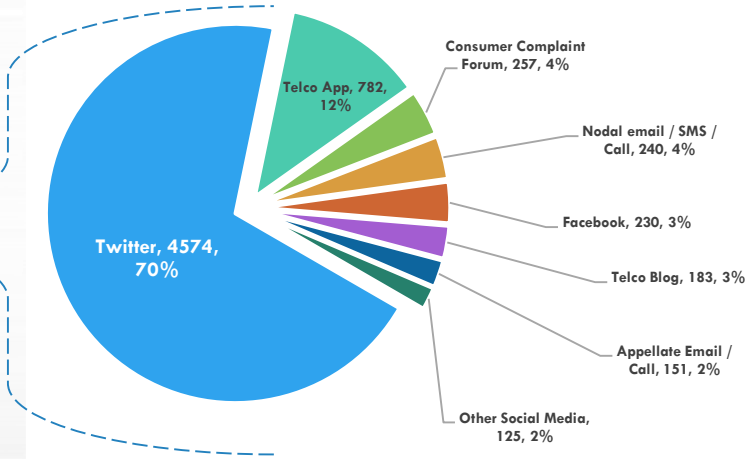


Solution / Suggestion :

- More Focus on resolving 3G Voice issues & 4G Data Issues.
- Insist to push customer's to use VoLTE service which has higher performance metric.
- Identified areas were Coverage & Capacity Augmentation is required for 3G Voice & 4G Data issues [No coverage / Congestion/Buffering/Low speed etc]
- No. of SR's raised for 4G Data are addressed but still un-resolved [i.e On-Hold], special focus has to be given for faster closer.

2. Business Problem : To acknowledge which is the most used source for reporting issues & the most frequent used sub-source type by the customer which needs attention and lower SLA.





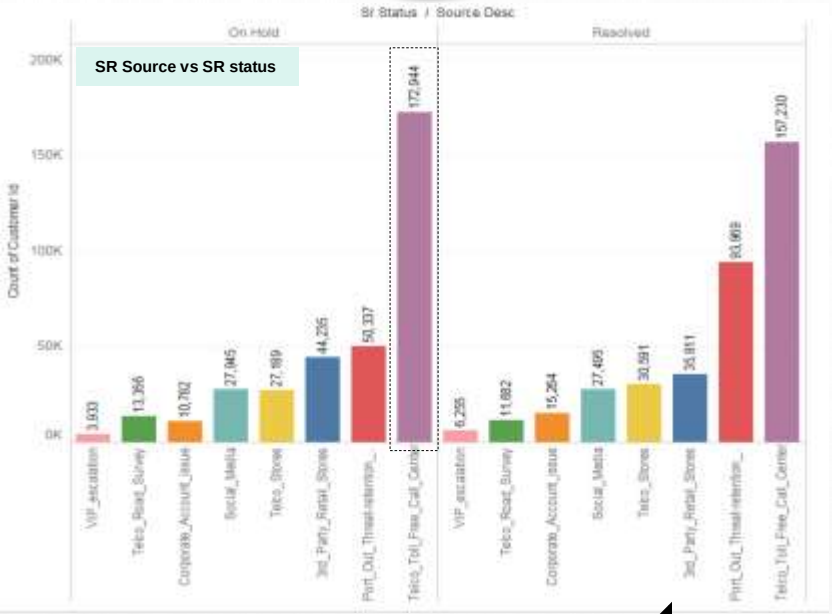
Highs :

- **~1%** SR's are obtain via Source Mode : VIP escalation
- Social Media has the lowest SLA days w.r.t other source type.

Lows :

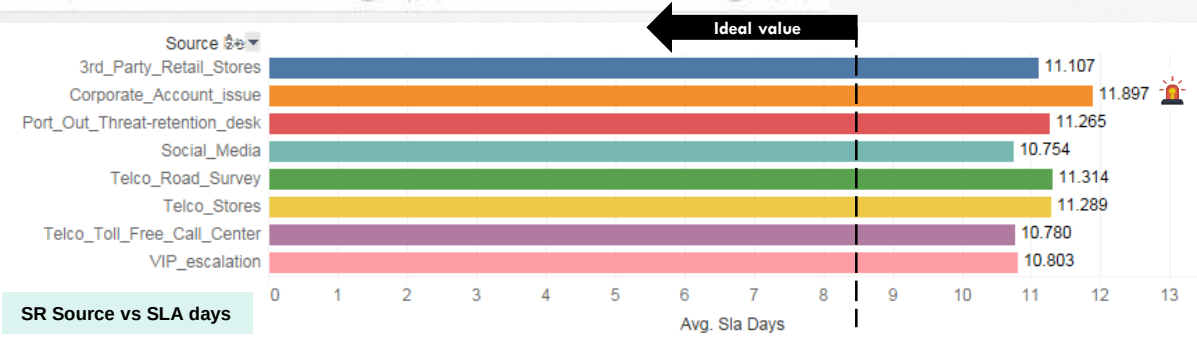
- **19%** SR's are reported :: Source :: **Port Out Threat desk,** need special attention to avoid churn out to competitor & loss of revenue
- **8%** SR's are reported :: Source :: Social Media, Major chunk from Twitter **[70%]**
- Corporate Account has the highest SLA days w.r.t other source type.

2. Business Problem : To acknowledge which is the most used source for reporting issues & the most frequent used sub-source type by the customer which needs attention and lower SLA. [Continue……..]



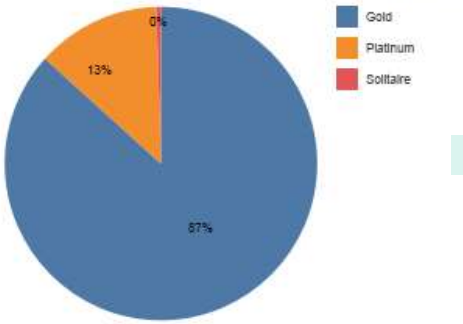
Solution / Suggestion :

- More Focus on resolving Telco Call center cases.
- Guide and train customer care faculty to understand customer's VOC and try to resolve the issues at that moment is remotely possible, these will help to reduce in-flow of SR's.
- Avg. SLA has to minimize [Currently Avg. SLA >=10 Days].
- Focus required for Corporate Account ["high SLA days"]
- Special benchmarks to be made to reduce SLA days for Corporate Accounts , VIP escalations and Social media cases as they directly links companies performance and reputation.

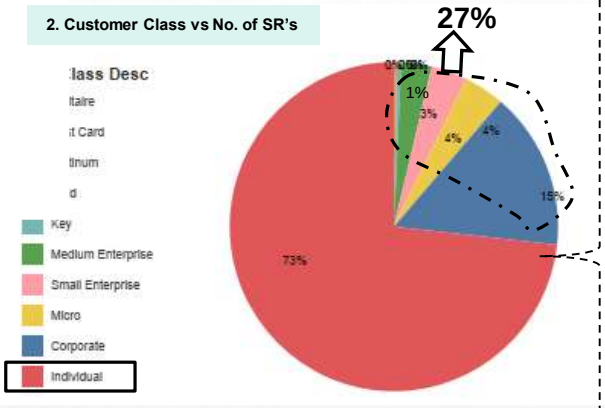


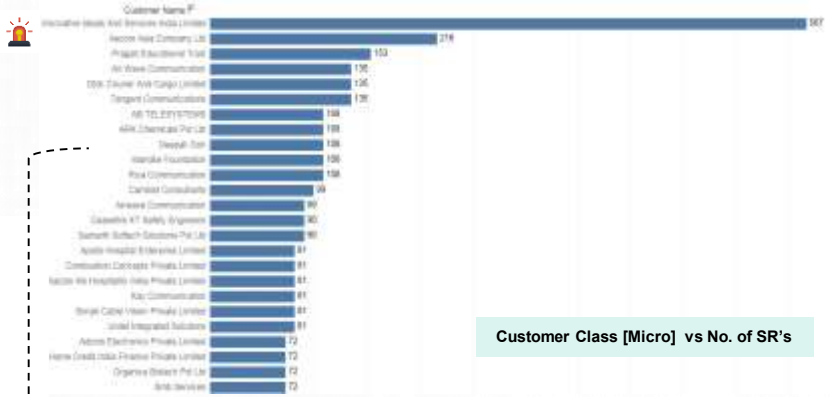
3. Business Problem : To acknowledge & convey which customer's or class have reported frequent issue and which customer's has to be targeted with special potential and fast tracking system with as low as possible SLA.

1. Customer Type vs No. of SR's

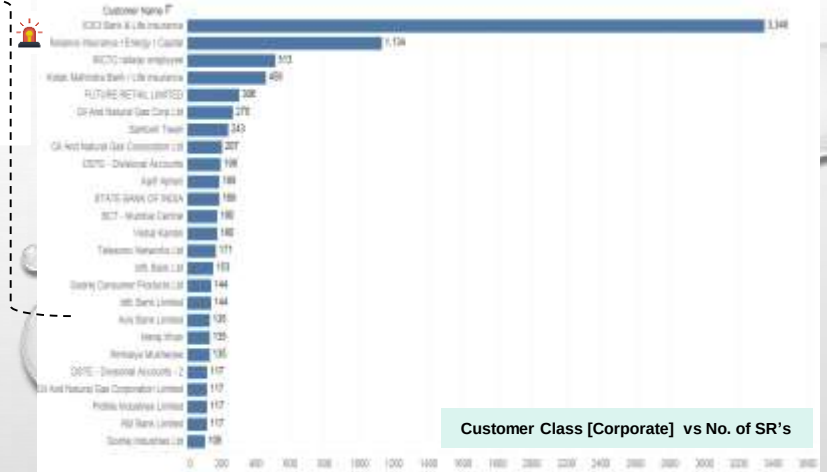


2. Customer Class vs No. of SR's





Customer Class [Micro] vs No. of SR's



Customer Class [Corporate] vs No. of SR's

Highs :

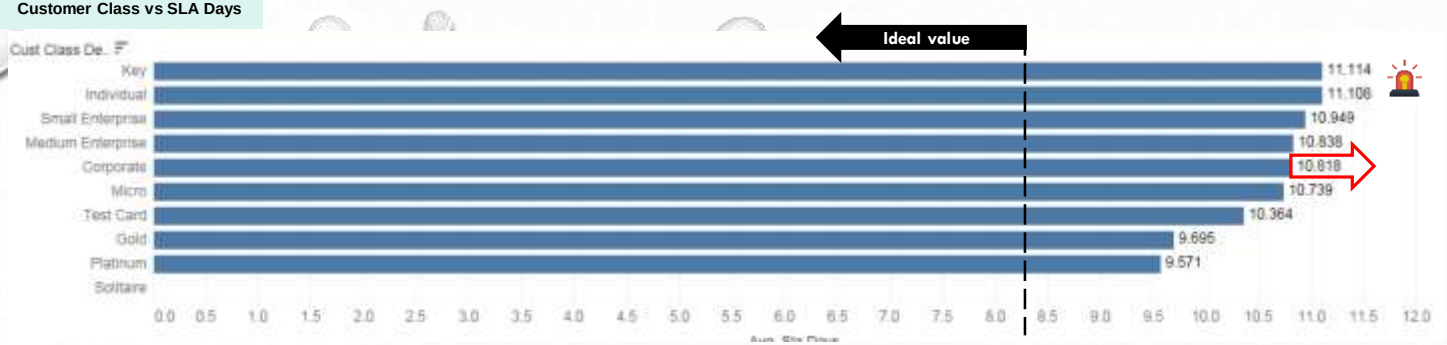
- **<1%** SR's are raised by Solitaire customer's.

Lows :

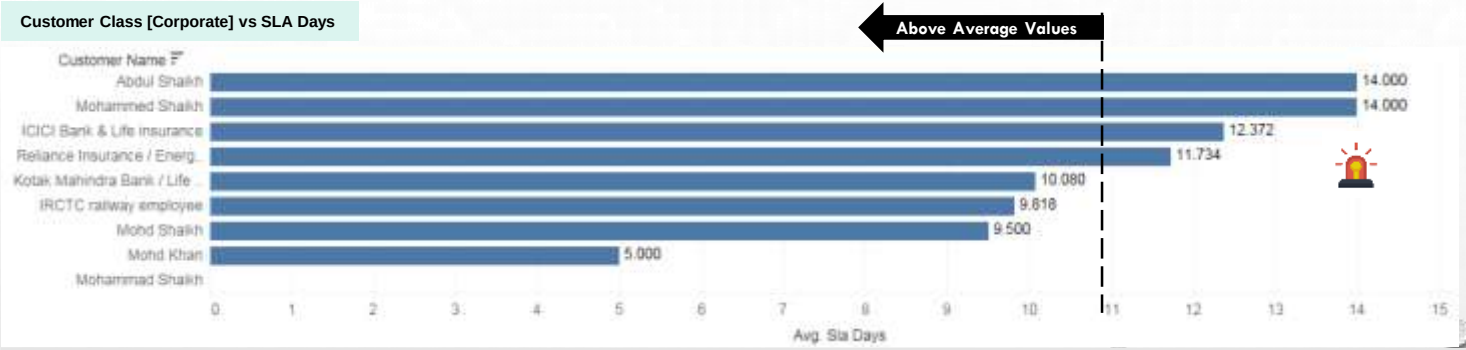
- **73%** SR's are raised by individual's
- **27%** SR's are raised by Corporate's, Small & Medium Enterprise or sectors, need special attention to avoid churn out to competitor.
- ICICI Bank & Reliance Energy has reported most issues from corporate customer class & Innovative Ideas and Aecom Asia Pvt Ltd from Micro customer class

3. Business Problem : To acknowledge & convey which customer's or class have reported frequent issue and which customer's has to be targeted with special potential and fast tracking system with as low as possible SLA [Continue……]

Customer Class vs SLA Days



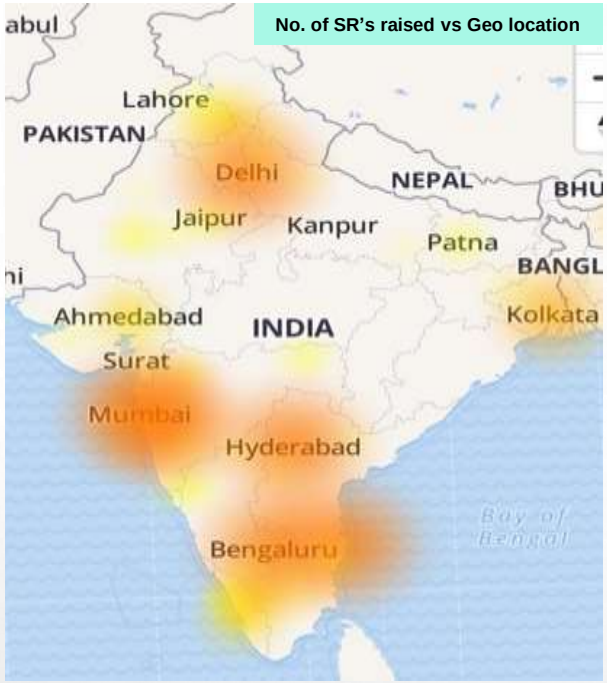
Customer Class [Corporate] vs SLA Days

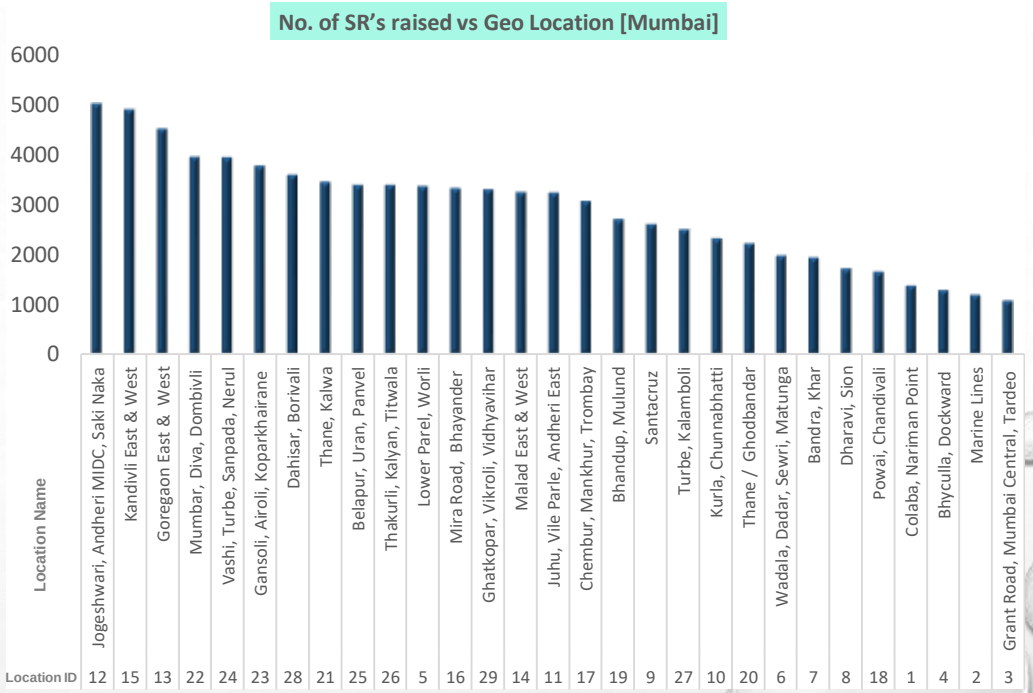


Solution / Suggestion :

- Avg. SLA has to minimize [Currently Avg. SLA >=10 Days].
- Focus required for Key, Small / Medium Enterprise and Corporate Account ["high SLA days"]
- Special benchmarks to be made to reduce SLA days for ICICI bank and Reliance Energy ["SLA above the Avg of Corporate Account"], as they directly links companies performance and reputation.
- Special solutions to be planned for corporate account & Small / Medium Enterprise to avoid churn to competitor due to high SLA and repetitive complaints.

4. Business Problem : To check for the existence of Geographical locations with maximum SRs registered and distinguish by different SR status which needs attention.





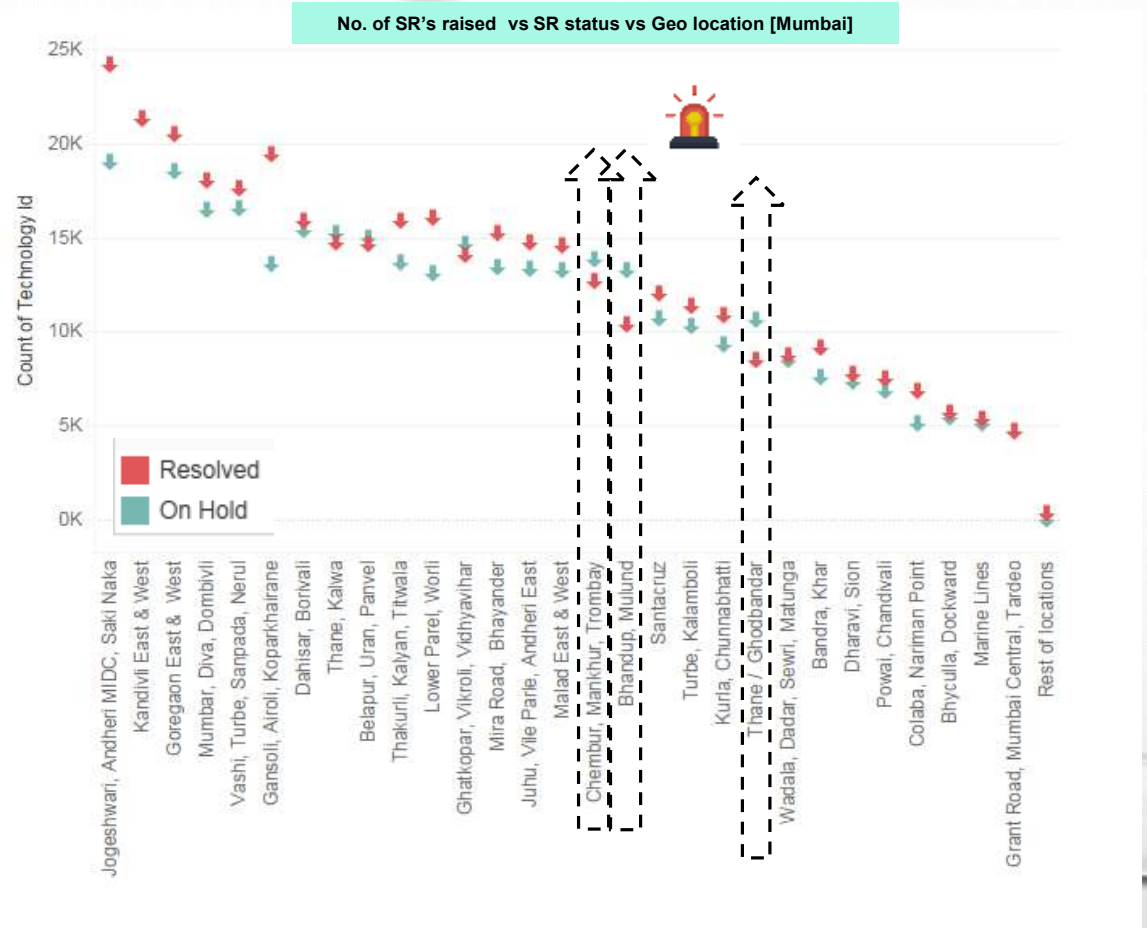
Highs :

- <=5% Complaints are from Rest of India.
- For Mumbai :: Location ID 1 to 4 :: Lowest SR's :: High Customer Satisfaction Index
- Kolkata with least complaints raised and best amongst the metro city.

Lows :

- 37% of complaints reported from Mumbai, followed by Bangalore [21%] & Delhi [19%]
- For Mumbai :: Location ID 12, 13 & 15 :: Highest SR's :: Low Customer Satisfaction Index

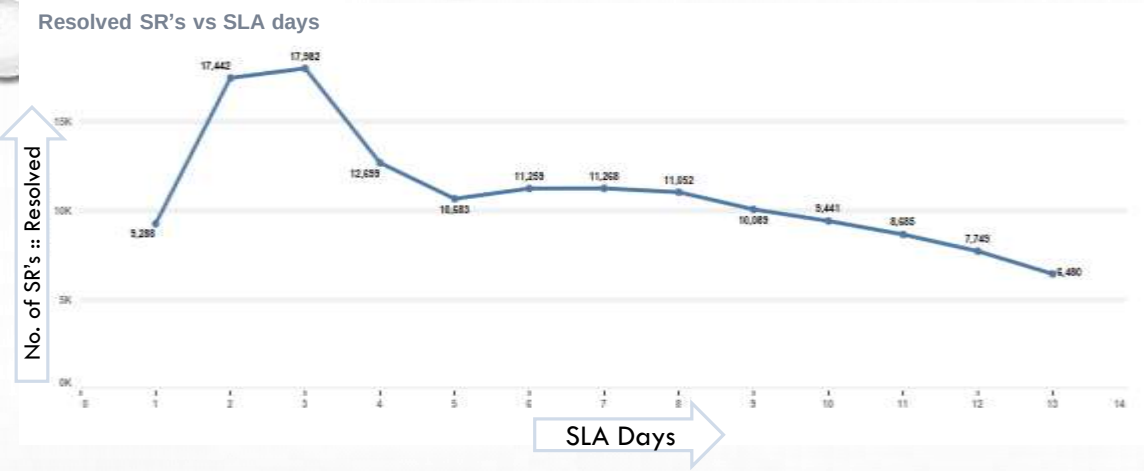
4. Business Problem : To check for the existence of Geographical locations with maximum SRs registered and distinguish by different SR status which needs attention [Continue……]

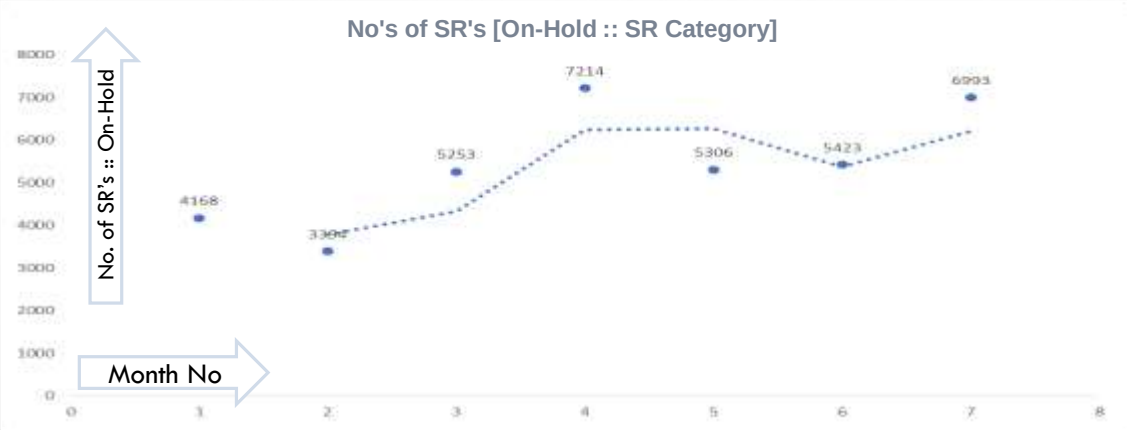


Solution / Suggestion :

- Prime Focus for marketing & network team for improvement : Mumbai.
- In Mumbai : Jogeshwari & Kandivali location's has the **highest SR's raised and SR Status : Resolved too** – Need to get RCA for repeated SR's occurrence's.
- In Mumbai location like : Chembur / Bhandup / Mulund / Thane ghodbander has **high On-Hold to SR's raised ratio** – needs fast track closer with appropriate solutions

5. Business Problem : To check performance based on SLA days by comparing start date (Service request raised date) and resolution date along with On-Hold dates, which need attention and faster closer





Highs :

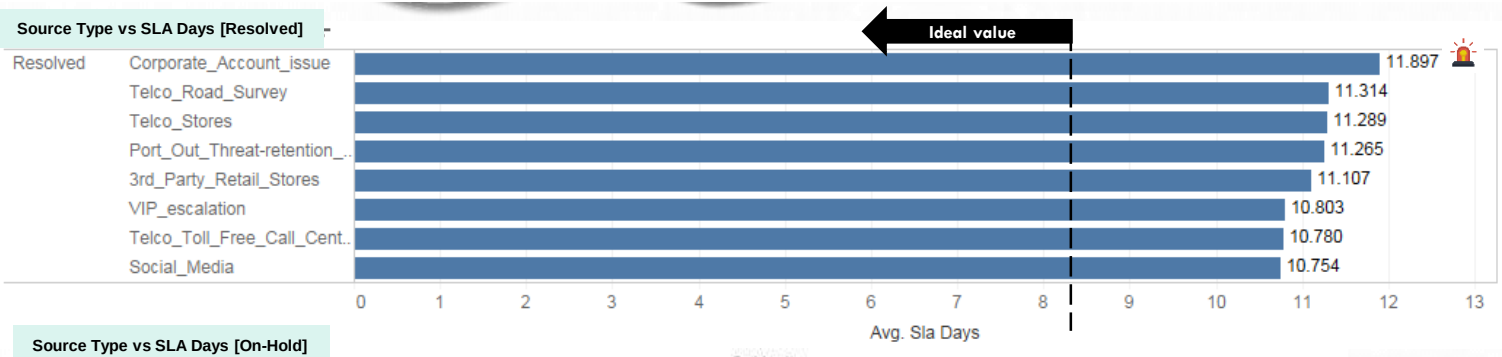
- **48%** SR's under **Resolved** category have <=5 days SLA days.
- **2 to 4 Days** is the average SLA days.
- Social Media has the lowest SLA days

Lows :

- **Minimize SLA days,** should target >=8 days SLA days [**39%**].
- Month on Month - **Increasing Trend -** No. of SR's under SR Status :: On-Hold.
- Month on Month – **On Hold cases :: increased** for Telco Toll free, 3rd party retail store & Social media

5. Business Problem : To check performance based on SLA days by comparing start date (Service request raised date) and resolution date along with On-Hold dates, which need attention and faster closer [Continue……..]

Source Type vs SLA Days [Resolved]



Source Type vs SLA Days [On-Hold]

Source Desc	201804	201805	201806	201807	201808	201809	201810
	Sr Month						
3rd_Party_Retail_Stores	2,772	2,655	4,905	8,919	7,371	7,047	8,667
Corporate_Account_issue	252	378	1,350	2,376	2,241	1,728	1,899
Port_Out_Threat-retention_	8,073	7,758	8,199	11,034	3,879	3,708	6,480
Social_Media	3,996	2,565	3,465	5,004	3,402	2,880	3,780
Telco_Road_Survey	1,251	999	2,241	2,916	1,827	1,575	1,863
Telco_Stores	3,402	2,844	5,247	5,454	3,960	2,970	2,754
Telco_Toll_Free_Call_Cent..	17,127	12,870	21,132	28,566	24,489	27,774	32,580
VIP_escalation	630	477	720	630	387	414	585

Solutions / Suggestion :

- Avg. SLA has to minimize to less than <=8 days [Currently Avg. SLA >=10 Days].
- Focus required for Corporate Account ["**highest SLA days**"]
- Special benchmarks to be made to reduce SLA days & reduce On-Hold cases for Telco Toll free, Port Out Treat, 3rd party retail store & Social media cases as they directly links companies performance and reputation.

EXECUTIVE SUMMARY – BUSINESS PROBLEM & SUGGESTION

Sr. No	Business Problem	Tables Used	Highs	Lows	Suggestions & Solutions
1	To acknowledge which service's across technology is doing well & the most frequent issue type faced by the customer which needs attention.	sr_details technology issue_type	▪ 2G Voice has very less contribution [i.e majority of customers = smart phone user] ▪ Roaming issue is very rarely reported, hence there is no intra-inter roaming issues.	3G – Voice [33%] , 4G – Voice [17%] & 4G – Data [32%] is Major Chuck for Voice & Data related issues respectively	▪ Focus required on resolving 3G Voice issues & 4G Data Issues. ▪ Insist to push customer's to use VoLTE service which has higher performance metric. ▪ Areas were Coverage & Capacity Augmentation is required which need to be done via network team ▪ Faster closer and Special focus on On-Hold cases for 4G data issues [Major chuck]
2	To acknowledge which is the most used source for reporting issues & the most frequent used sub-source type by the customer which needs attention and lower SLA.	sr_details sr_source sr_subsource	▪ **~1%** SR's are obtain via Source Mode : VIP escalation ▪ Social Media has the lowest SLA days.	▪ **19%** SR's reported :: Source :: Port Out Threat desk. **AND** **8%** from Social Media, Major chunk from Sub source : Twitter **[70%]** ▪ Corporate Account has the highest SLA days	▪ More Focus on resolving Telco Call center & Port out cases. ▪ Guidance and training to customer care faculty to understand customer's VOC and try to resolve issues. ▪ Avg. SLA has to minimize [Currently Avg. SLA >=10 Days]. ▪ Focus required for Corporate Account ["**highest SLA days**"] ▪ Special benchmarks to be made to reduce SLA days for Corporate Accounts , VIP escalations, Port out desk and Social media cases as they directly links companies performance/reputation and helps to avoid churn out to competitor & loss of revenue.
3	To acknowledge & convey which customer's or class have reported frequent issue and which customer's has to be targeted with special potential and fast tracking system with as low as possible SLA.	sr_details customer customer type customer class	▪ <1% SR's are raised by Solitaire customer's.	▪ **73%** SR's are raised by individual's ▪ **27%** SR's are raised by Corporate's, Small/Medium Enterprise. ▪ **ICICI Bank** & **Reliance Energy** [corporate class] and **Innovative Ideas** [Micro class] most issues reported	▪ Avg. SLA has to minimize [Currently Avg. SLA >=10 Days]. ▪ Focus required for Key, Small / Medium Enterprise and Corporate Account ["**higher SLA days**"]. ▪ Special benchmarks & Solution to be planned : - Reduce SLA days for ICICI bank and Reliance Energy ["SLA above the Avg of Corporate Account"] - Resolve frequently reported issues for Corporate account & Small Enterprise as they directly links companies performance/reputation and helps to avoid churn out to competitor & loss of revenue.

EXECUTIVE SUMMARY – BUSINESS PROBLEM & SUGGESTION

Sr. No	Business Problem	Tables Used	Highs	Lows	Suggestions & Solutions
4	To check for the existence of Geographical locations with maximum SRs registered and distinguish by different SR status which needs attention.	sr_details sr_location sr_status	▪ <=5% Complaints are from Rest of India. ▪ Within Mumbai :: **Location ID 1 to 4** :: Lowest SR's ▪ Kolkata with least complaints raised [best amongst the metro city].	▪ **37%** of total complaints reported from Mumbai [Highest], followed by Bangalore [**21%**] & Delhi [**19%**] ▪ Within Mumbai :: **Location ID 12, 13 & 15** :: Highest SR's :: Low Customer Satisfaction Index	▪ Prime Focus for marketing & network team for improvement : **Mumbai.** ▪ In Mumbai : Jogeshwari & Kandivali location's has the **highest SR's raised and SR_status :: Resolved** too – Need to get RCA for repeated SR's occurrence's. ▪ In Mumbai location like : Chembur / Bhandup / Mulund / Thane ghodbander has **high On-Hold to SR's raised ratio** - Fast track closer with appropriate solutions.
5	To check performance based on SLA days by comparing start date (Service request raised date) and resolution date along with On-Hold dates which need attention and faster closer	sr_details sr_status customer type	▪ **48%** SR's under **Resolved** category have <=5 days SLA days. ▪ **2 to 4 Days** is the average SLA days. ▪ **Social Media** has the **lowest SLA days.**	▪ **Minimize SLA days,** should target >=8 days SLA days [**39%**]. ▪ Month on Month – **Increasing Trend** [No. of SR's under SR Status :: On-Hold]. ▪ Month on Month – **On Hold cases :: increased** for Telco Toll free, 3rd party retail store & Social media	▪ Avg. SLA has to minimize to less than <=8 days [Currently Avg. SLA >=10 Days]. ▪ Focus required for Corporate Account ["**highest SLA days ~11.8 days**"] ▪ Special benchmarks to be made to **reduce SLA days** & **reduce On-Hold cases** for Telco Toll free, Port Out Treat, 3rd party retail store & Social media cases as they directly links companies performance and reputation.

RECOMMENDATIONS

1) Encourage customers to use more efficient mechanisms such as Telco App, SMS and Telco Stores to report service issues
   (Toll free call is inefficient and resource, cost intensive)
2) Involve Engineering to look at stability issues with 3G Voice and 4G Data as they are the technologies with most issues.
3) Involve Engineering to get RCA along with Strong plan to improve Locations where higher % of Voice and Data issues are observed
4) Streamline resolution process to reduce time to resolve requests

LESSONS LEARNT (ON PROJECT)

1) Cleanup unneeded data - there is too much data that is not relevant to the analysis/goal at hand, cleaning it helps focus efforts on desired goals
2) Always keep the desired state/goals in mind to keep the analysis focused on the dimensions that matters.

Thank you !!