

Understanding Churn

Analysis, predictions and recommendations on

Blue Telecom (fictional company)

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Context

- In SaaS or Service Provider companies one of the most important metric monitored to increase customer retention is Churn
- Increasing customer retention rates by 5%, may increase profits by 25% to 95%*
- Depending on the industry, acquiring a new customer can be from 5 to 25 times more expensive than retaining an existing one**
- This is why, Churn is a critical metric to monitor, analyze and predict

*Source: [research done by Frederick Reichheld of Bain & Company](#)

**Source: [Harvard Business review](#)

About the analysis done on Blue Telecom

Analysed the company results from its last quarter on their following **customer variables (collected through Kaggle and Scraping)**



Demographics



Location



Services

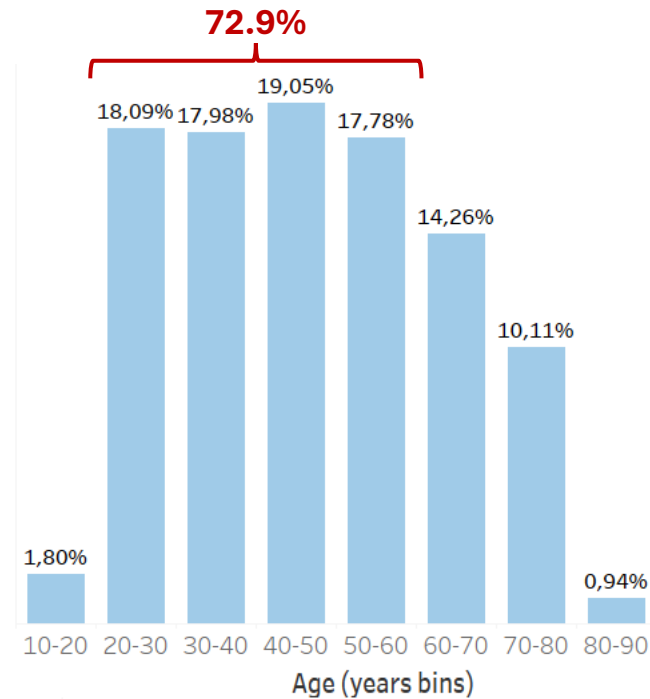


Status with Blue

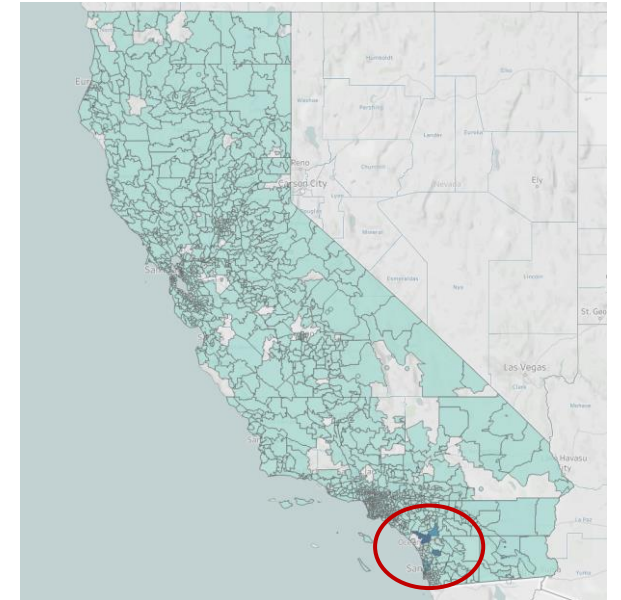
About Blue Telecom

Total
customers
(7,043)

Customer's age
(% from total)



Customer's location: California, US



Over 72% of customer have between 20 – 60 years old, and they are well distributed across zip codes (**higher concentration in the south: LA and San Diego**)

About Blue Telecom (last quarter)

Total
customers
(7,043)

Services hired by customers (% from total)

Service	% from total
Phone	90%
Unlimited data	67%
Multiple lines	42%
Device protection	34%
Internet	78%
Online security	29%
Online backup	34%
Premium tech support	29%
Streaming TV	38%
Streaming movies	38%
Streaming music	35%

Revenues generated

Revenues (USD) 21.4M

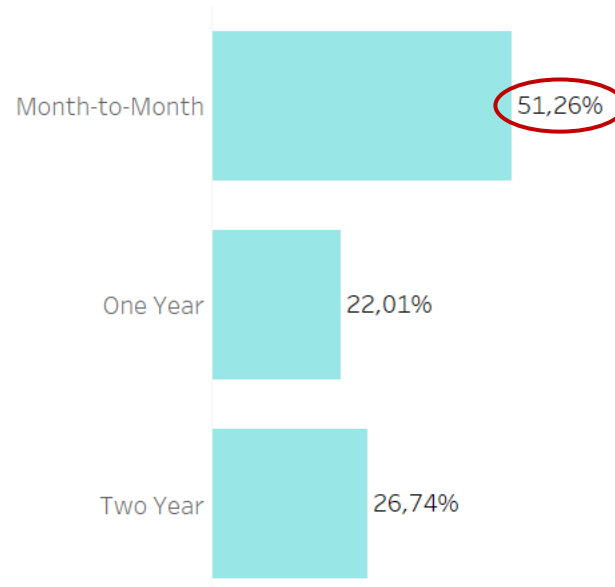
Total services 16.1M (75.23%)
Total long-distance 5.5M (24.7%)
Total extra data 0.05M (0.01%)

Most of them with phone service (90%), and 75% of revenues came from charges on their services

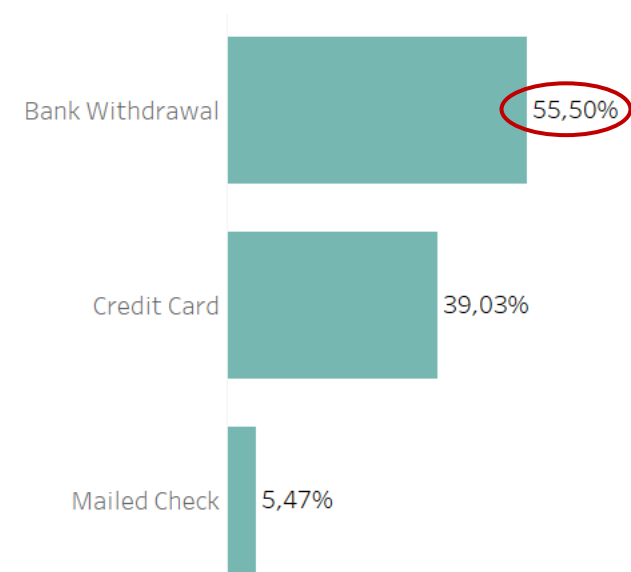
About Blue Telecom

Total
customers
(7,043)

Contract type
(% from total)



Payment method
(% from total)

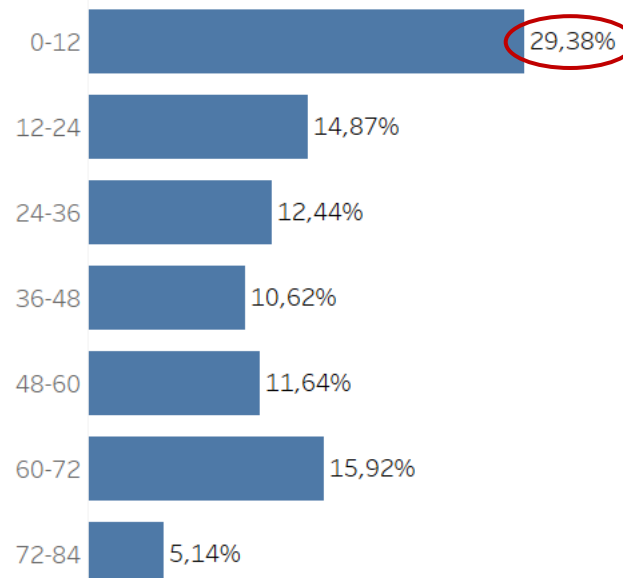


Over half of Blue customers have a monthly contract and pay in cash

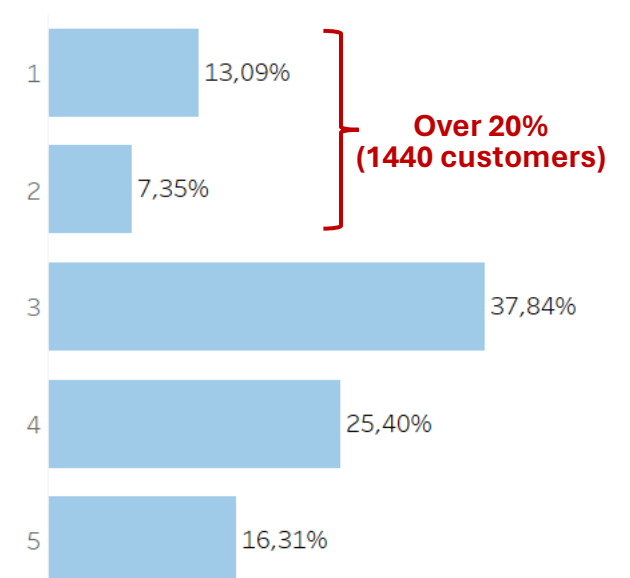
About Blue Telecom

Total
customers
(7,043)

Tenure in monthly bins
(% from total)



Satisfaction score on Blue (1-5)
(% from total)



Around **30%** of our customer have less than a year with Blue, and over **20%** of them rated the company 1 or 2 (lowest score in scale)

Insights – last quarter results

Churned Customers: 1,869

Churn Rate

26.54%

**Revenue to
be loss**

3.7 M USD

**Avg. Churn
Score**

81.78

Avg. CLTV

4.1K USD

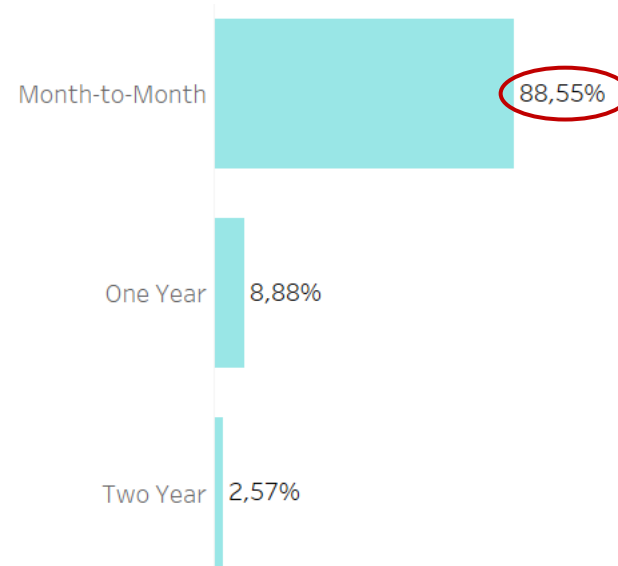
For those customers staying, their avg. churn score was **50.1 (-30 vs churners)** and their CLTV 4.5k USD

Insights – last quarter results

Churned
customers
(1,869)

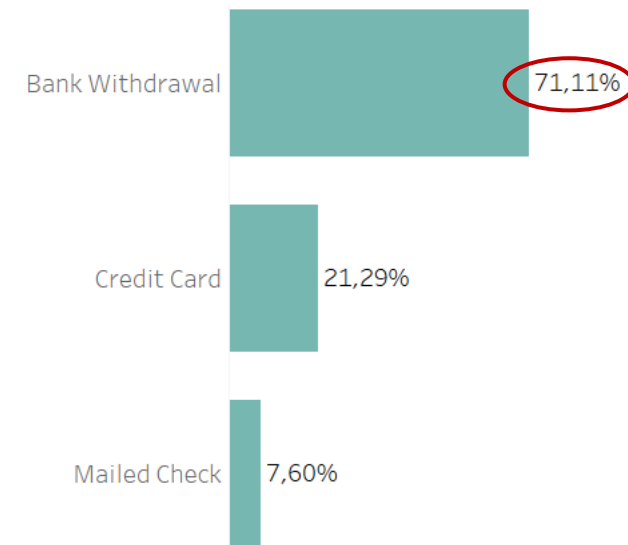
Contract type

(% from total churned)



Payment method

(% from total churned)

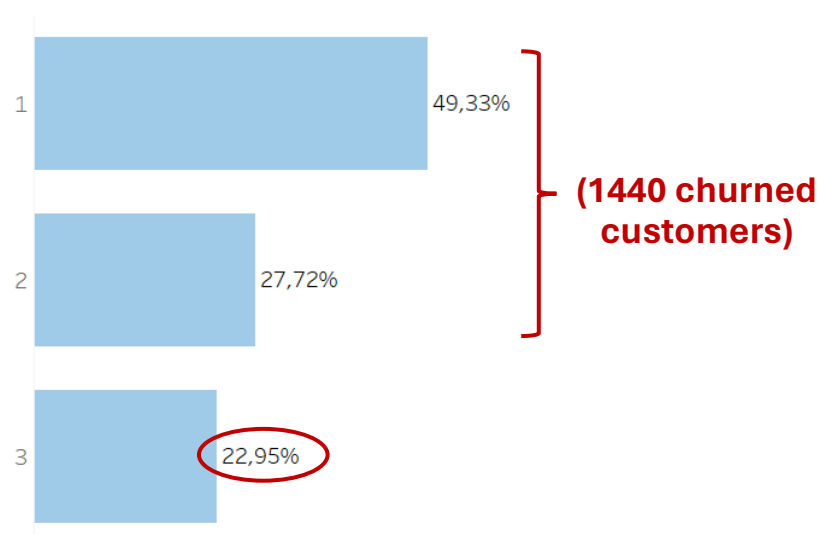


Around **89%** of churned customers had a monthly contract, and over **70%** of them paid in cash last quarter

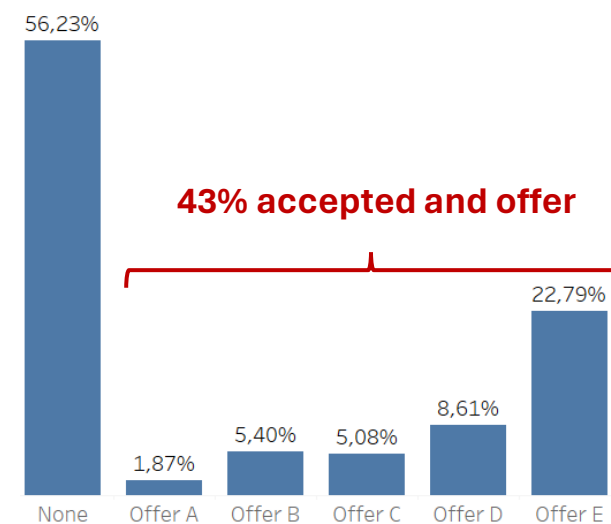
Insights – last quarter results

Churned
customers
(1,869)

Satisfaction score on Blue (1-5)
(% from total)



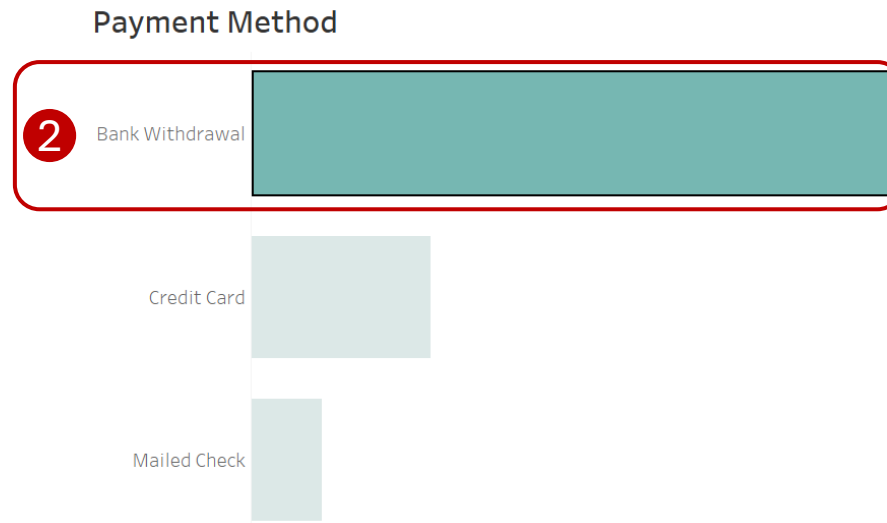
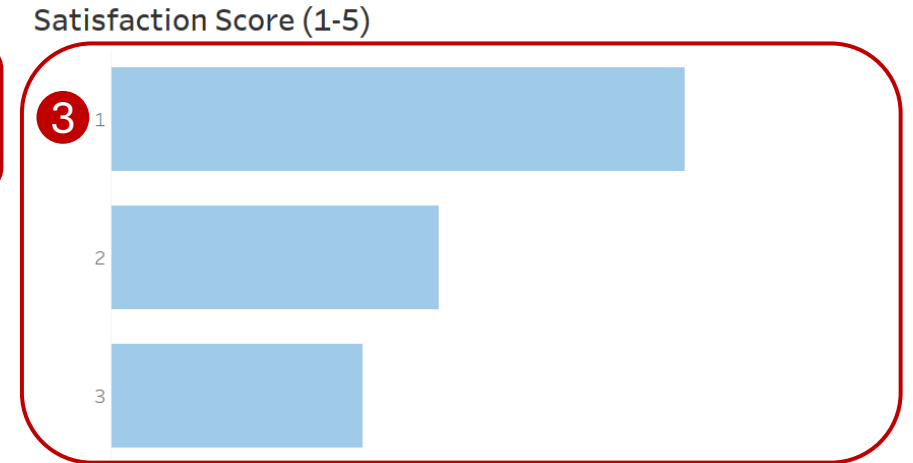
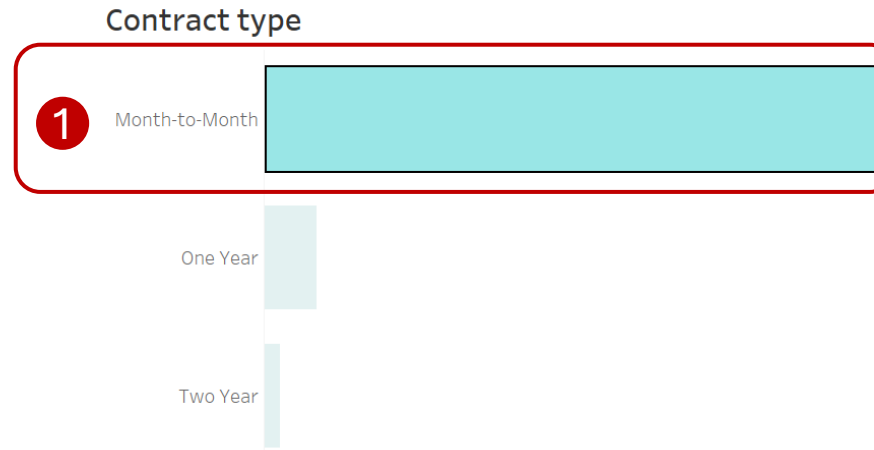
Marketing offer accepted before leaving
(% from total churned)



All customers (1440) who rated 'Blue' 1 and 2 churned, while 429 who rated them 3 also left **(23% from total churned)**. In relation to marketing offers, over **43%** who left accepted a marketing offer before leaving

Insights – last quarter results

Churned
customers
(1,869)



Total customers
1.195
64% out of 1,869

Total Revenues
1.957.327

Around **64%** of churned customers had a **(1)** monthly contract type, **(2)** paid in cash, and **(3)** rated the company of ≤ 3

Prediction model (churn score)

Building a prediction model could help proactively identify who is likely to leave or not in the future (Avg. Churn Score)

Highest R2
score



	R2 Score	MSE	RMSE
Linear Regression	0.271293	327.685770	18.102093
K-Nearest Neighbor Regressor	0.310789	309.925195	17.604692
Decision Trees Regressor	-0.084912	487.864443	22.087654
Random Forest	0.432424	255.228427	15.975870
Stochastic Gradient Descent	0.446377	248.953595	15.778263
Multi-layer Perceptron	0.219900	350.796456	18.729561

Recommendations

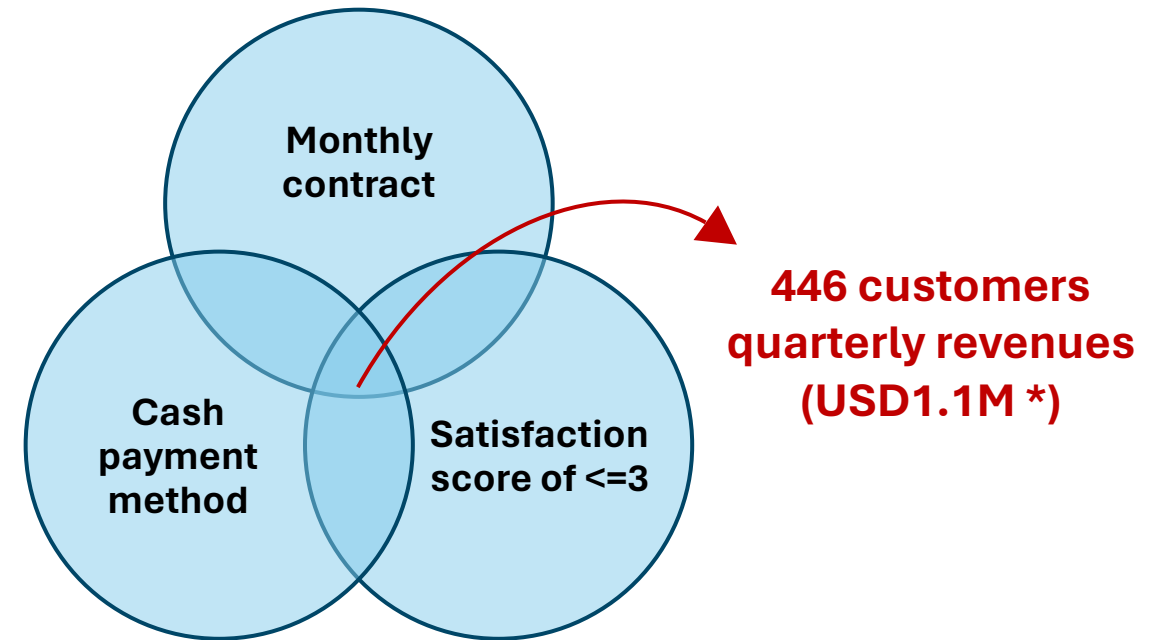
- **Identify high risk customers**

Given that almost 2/3 of churned customers had:

- Monthly contracts
- Paid with cash
- Satisfaction score of ≤ 3

Identifying how many and how much revenue these **segment** generates, could help identify existing customers considered **high risk for churning in the future**

Customers staying in this segment
(number and quarterly revenues)



*The risk can even increase if their churn score goes above 80 (at that time maybe we are late)

Recommendations

For those **446** customers worth around **USD 1.1M** quarterly, define different retention initiatives to:

- **Incentivize them paying in credit card** (71% of those who left, paid in cash). This will lead moving from a reactive invoicing to a proactive one
- **Incentivize them to move to long term contracts** (53% of those who left had a monthly contract). This may contribute increasing our revenues thus our CLTV
- **While building initiatives, analyse offers accepted by churned customers** (specially offer E: 23% of customers who left, accepted this offer), to avoid offering similar ones that may not be effective for retention

Budget for the initiatives could be defined as much as 5% from total revenues (standard spent in Telecom*), but it is recommended to be less than **USD1.1M**

Recommendations

In addition:

- **Keep monitoring customer satisfaction** (all customer who rated “Blue” 1 and 2 left us). As soon as this happens, reaching out to clients to understand reason of rating, and potentially offering initiatives defined above can lead to retaining them
- **Collect data and monitor other key metrics not included in this analysis** (i.e. CAC: customer acquisition cost).
 - This metric would help us understand the company’s effort to acquire new customers
 - Help us measuring other powerful ratios such as CLTV/CAC:
 - Ratio \Rightarrow 3: business is healthy and should focus on scaling (MKT and sales investment)
 - Ratio $<$ 3: business needs fixing and should be focus on profit rather than growth*

*Source: [BCG - The one ratio every subscription business needs to know](#)

Thank you!