

Technical test - Senior / Lead Data Scientist

Conclusions

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Outline

- ❏ **Data overview**
- ❏ **Churn**
- ❏ **Average revenue per user**
- ❏ **Next steps**

Data overview

20 000 clients

- 52% recruited in Jan 2016
- 48% recruited in Jan 2017

Acquisition channel

- Phone 34.5%
- Online 30.7%
- Outgoing call - promo 23.3%
- Point of sale 10.8%
- Other 0.52%

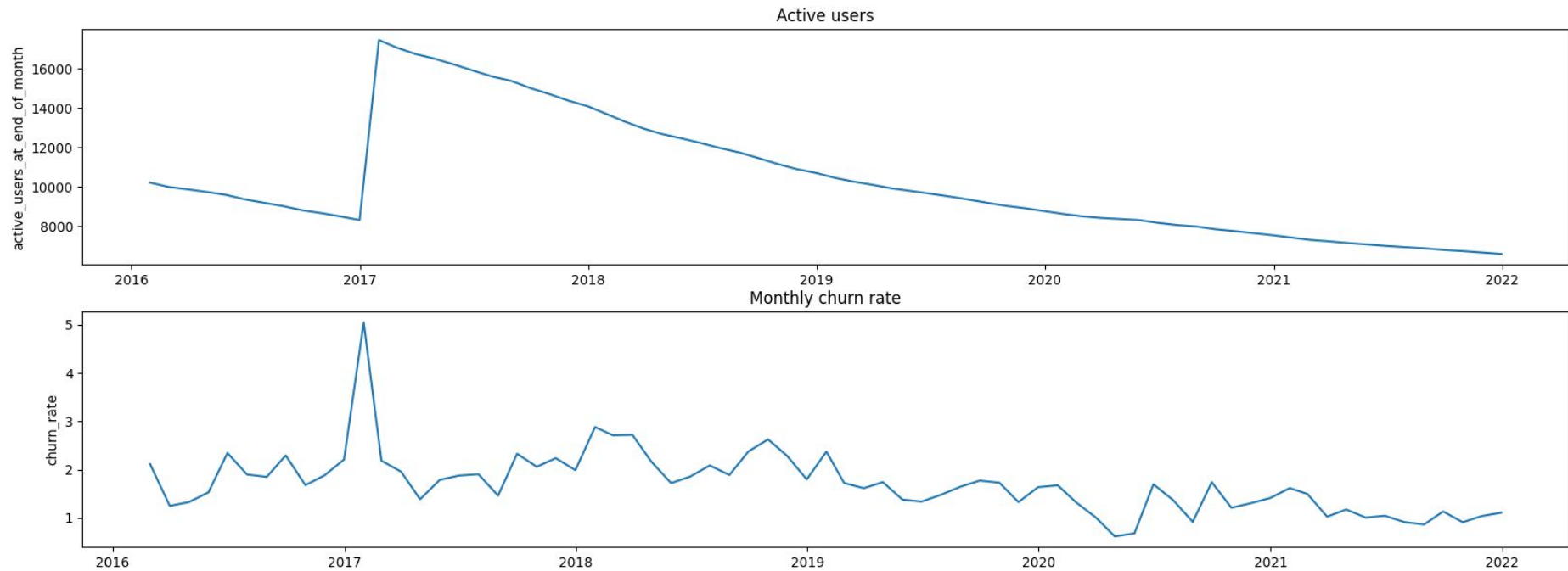
2 Offers

- Freebox Revolution 39.99€ 71%
- Freebox Revolution with TV 39.99 € 29%

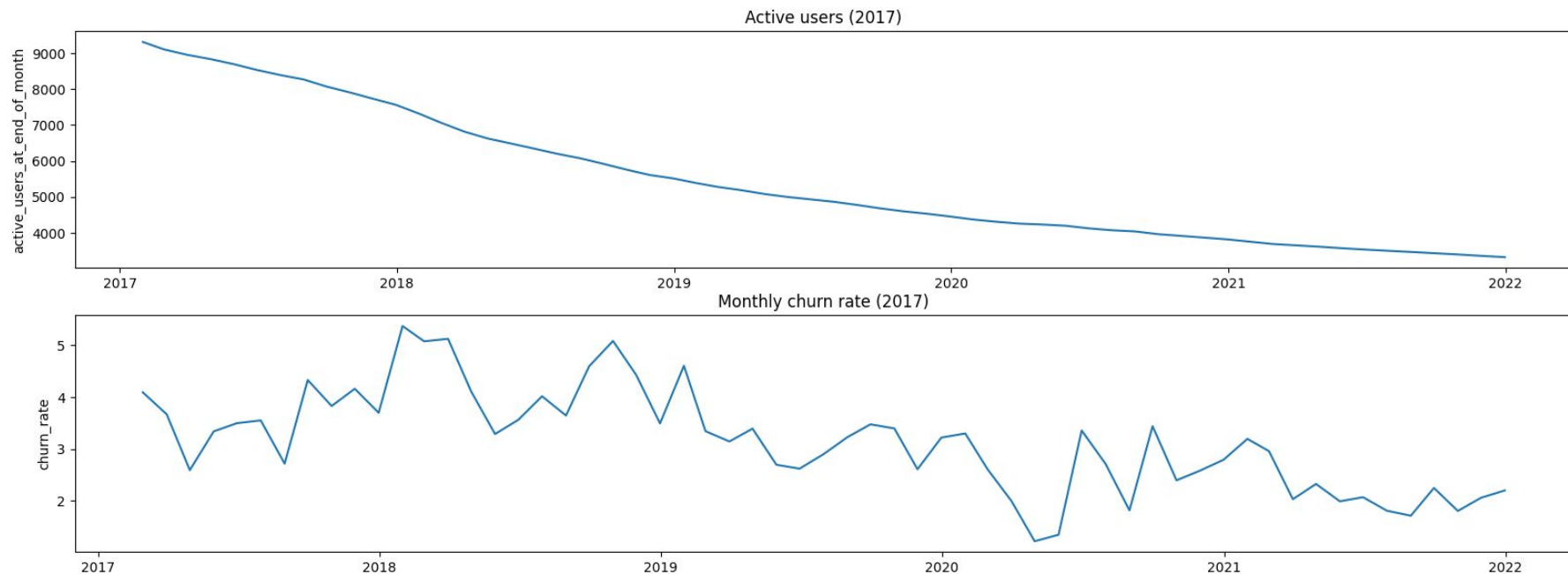
Technology

- ADSL 75%
- Fiber 25%

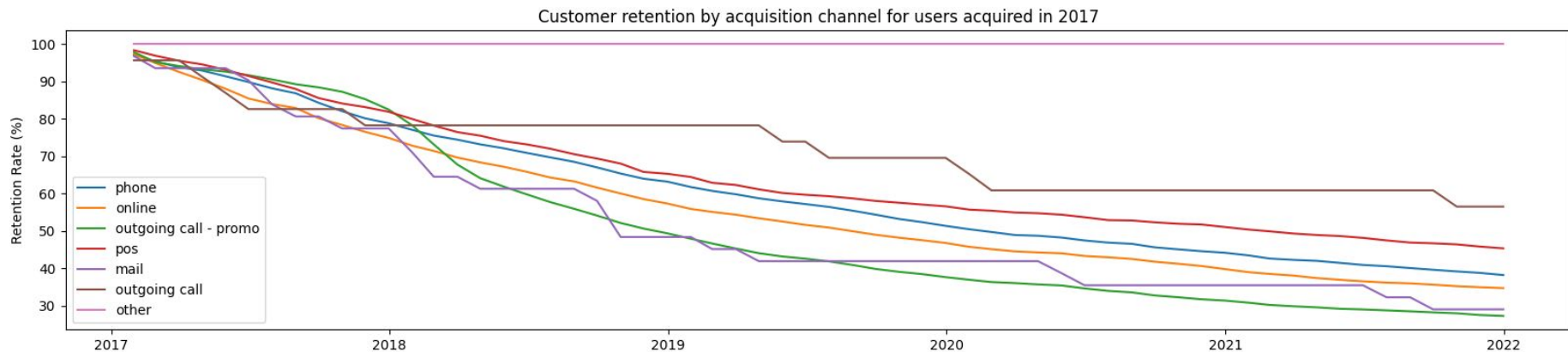
Churn - big picture



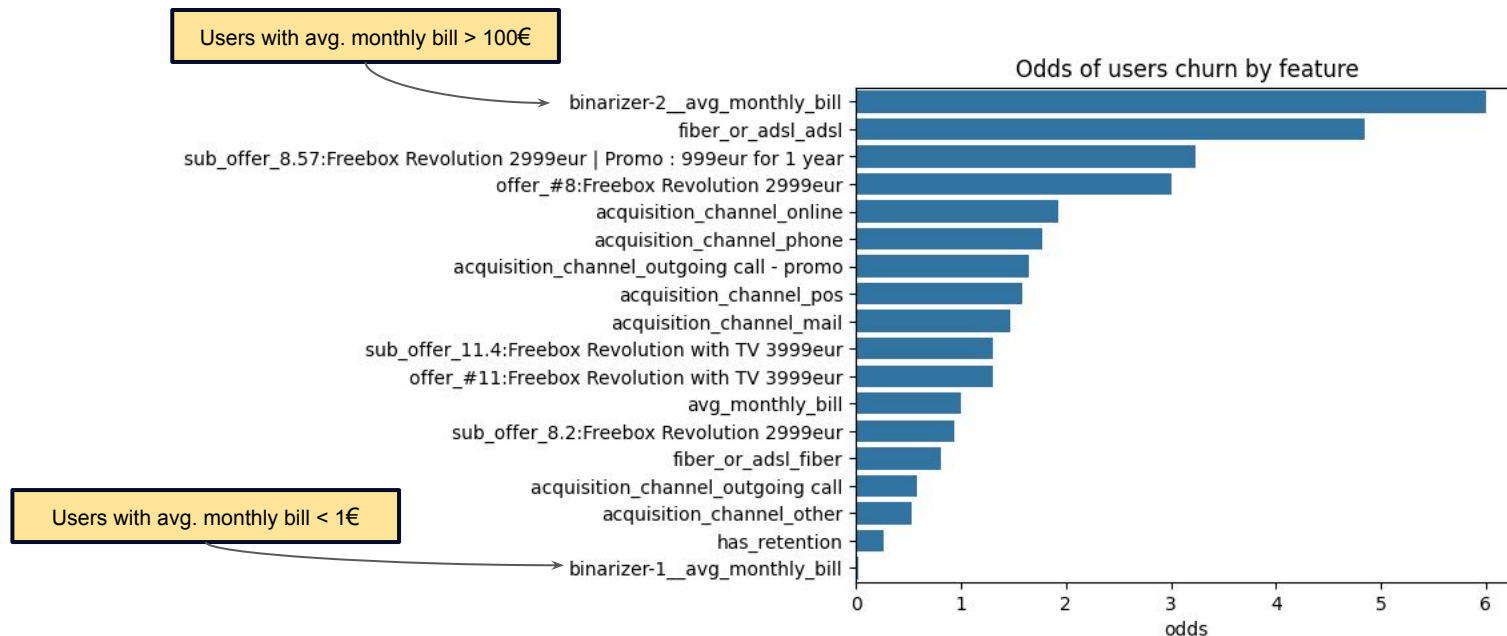
Churn - focus on 2017's 'intake'



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Churn - Identifying the drivers



Interpretation : “All else being equal, we expect the odds of a user churning to be 5 times higher if they have an ADSL connection.

Odds > 1 : Feature increases churn probability

Odds < 1 : Feature decreases churn probability

Churn - key insights

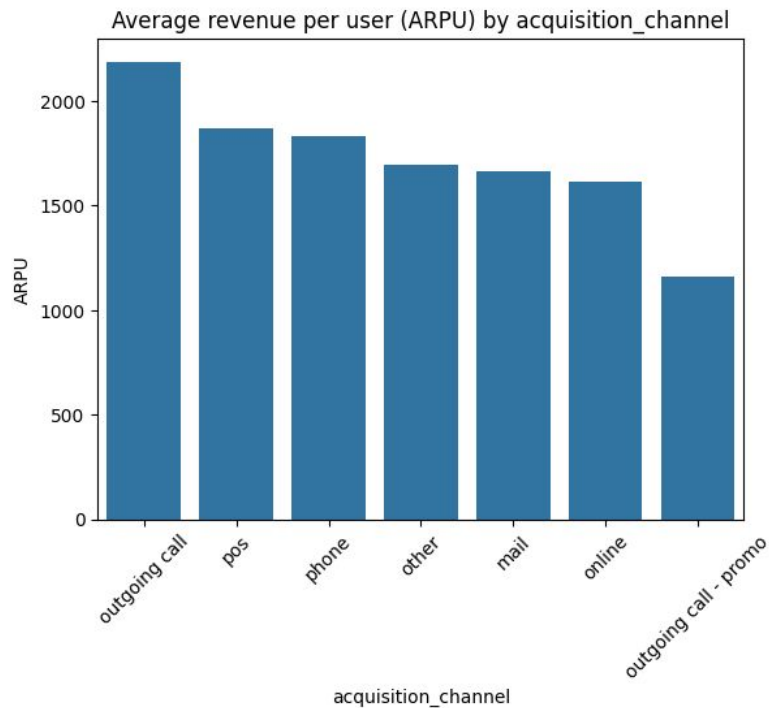
10% of customers are lost within 5 months and 20% within 11 months.

Customers are more likely to churn when:

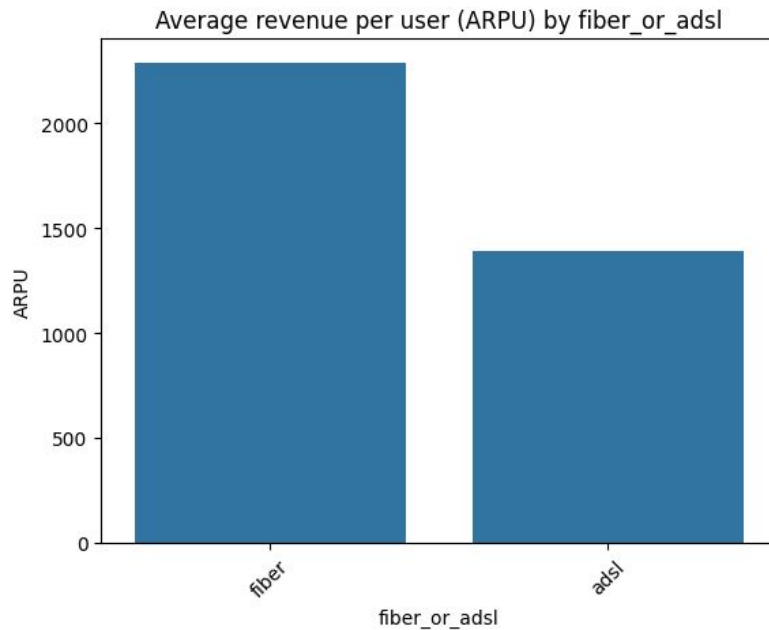
- Their average monthly bill is higher than 100€
 - 💡 Proactive identification of out of package charges with proposal of better suited plans.
- They have an ADSL connection
 - 💡 Propose fiber upgrade offers to ADSL customers in specific zones.

The data indicates that retention offers are effective in reducing churn.

Average revenue per user (ARPU)



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Average revenue per user (ARPU) - key insights

POS and Phone acquisition channel has ARPU 58% higher than Promotional outgoing calls and 13% higher than Online channels.

Fiber user have an ARPU more than 60% higher than ADSL users.

Next steps

Additional feature engineering:

- Outlier handling or normalization

Additional features:

- Client demographic information (age, years of experience...) for better segmentation

Better modelling:

- Exploring interactive effects between two or more features on churn (Shapely values).