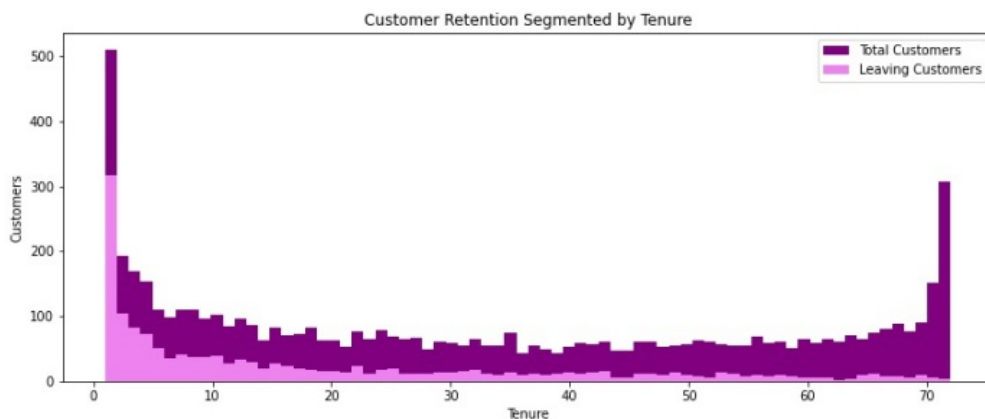


Improving Churn Rate at TELECOM

TELECOM's problem: low customer retention	Methodology Steps	Find commonalities: fiber optic Internet, electronic paperless billing	Find commonalities: monthly contracts, smaller households	Finding commonalities (decision tree)	Choose which customers to pursue	Promote "All Services" and "Pho..
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IMPROVING TELECOM'S LOW RETENTION RATE TO MAXIMIZE REVENUE

This month Telecom will lose 27% of its customers, accounting for 18% of its revenue over the last 6 years. This is far from the industry standard churn rate of 15% (imaginary number).



Source: <https://www.kaggle.com/radmirzosimov/telecom-users-dataset>

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Problem: How can we lower the churn rate?

Analysis and Solution:

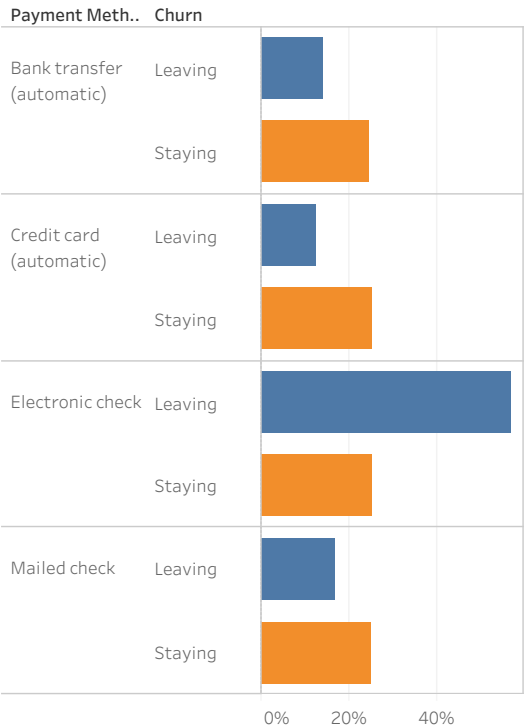
1. Target customers who are likely to leave -- Internet (especially fiber optic), paperless billing, electronic check, monthly contracts, small households
2. Measure whether the revenue of different groups of customers is significant and target the significant ones (primarily "All Services" and "Phone and Internet")
3. Examine narrowing price differences and promoting to customers at tenures with high churn

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Leaving customers can be targeted by their preferences for faster Internet and paperless and electronic check billing

Electronic Payment

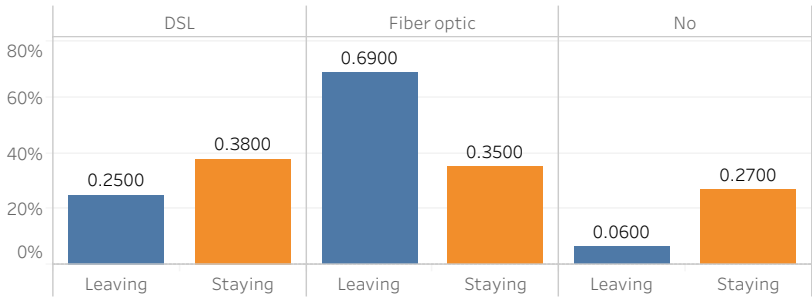


Paperless Billing

Leaving: 74%
Staying: 53%

Leaving customers appear to be tech savvy, preferring to manage their finances online with paperless billing (preferred 21% more often than staying customers) and electronic checking (over twice the amount of staying customers). There is also a strong preference for fiber optic Internet (twice the amount of staying customers along with very few having no Internet), which implies heavy Internet usage.

Internet Service, especially Fiber Optic



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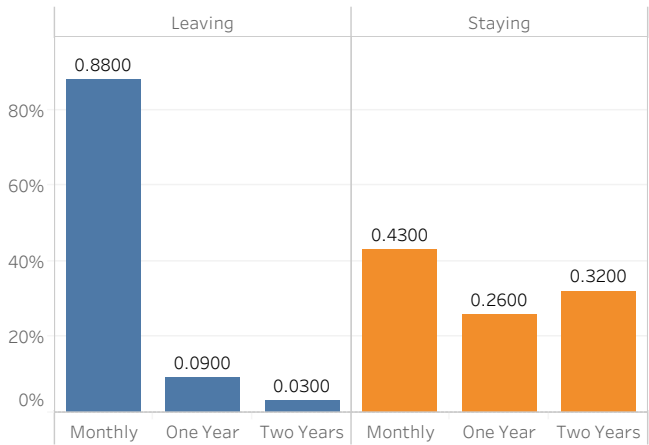
Leaving customers can also be targeted by their preferences for monthly contracts and smaller households

Preference of a monthly contract (88%) implies leaving customers are less like to financially commit ("testing it out" stage) and perhaps live a transient lifestyle.

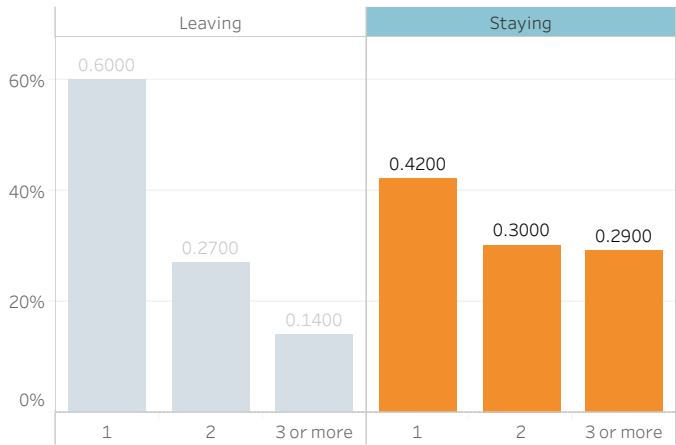
Being from a smaller household (60% live alone) and still preferring fiber optic Internet implies that leaving customers are especially tech savvy because they don't need as much bandwidth and still bought fiber optic.

Being tech savvy, less likely to commit to a contract, and probably not heads of a nuclear family (only 14% have three or more people), these leaving customers may be younger than staying customers.

Contract Length



Smaller Households



Improving Churn Rate at TELECOM

Methodology Steps	Find commonalities: fiber optic Internet, electronic paperless billing	Find commonalities: monthly contracts, smaller households	Finding commonalities (decision tree)	Choose which customers to pursue	Promote "All Services" and "Phone and Internet"	Time promotions by service bundle
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Alternative Analysis

Decision tree: largest populations of leaving customers have monthly contracts, fiber optic Internet, and short tenures (use for finding specific pockets of leaving customers)

Purity: percentage of customers in group who are leaving

Groups chosen are over 50% pure and a significant number of cases

MONTH-TO-MONTH CONTRACT

Phone Only

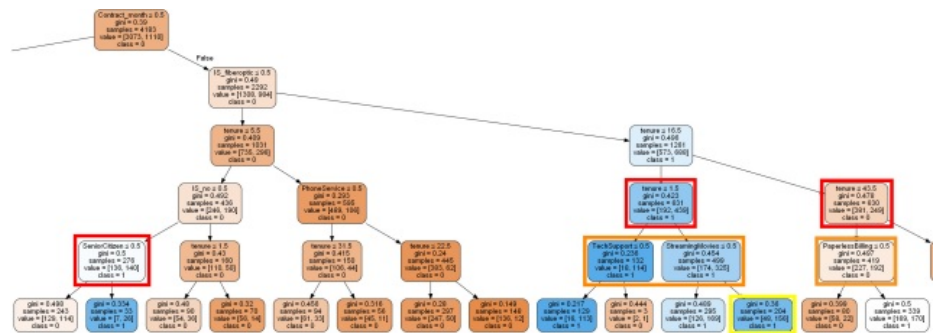
Tenure < 6 months
(especially Senior Citizens)
(13% of all cases, 50% pure)

Fiber Optic Internet

Tenure 1 month (10% of all cases, 86% pure)

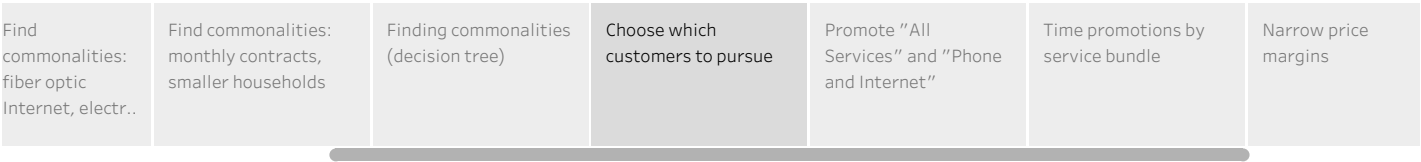
Tenure 2- 16 months (29% of all cases, 65% pure)
Subtype: Streaming Movies (14% of all cases, 76% pure)

Tenure 16 - 44 months (17% of all cases, 46% pure)
Subtype: Paperless Billing (15% of all cases, 50% pure)



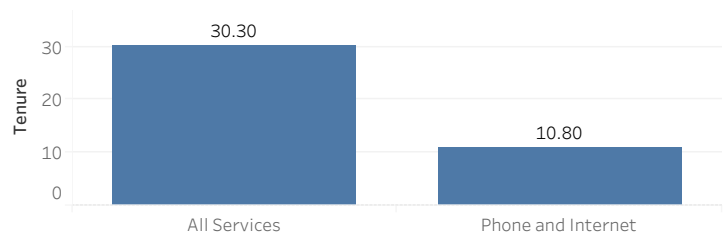
Identifies 70% of Total Cases

Improving Churn Rate at TELECOM

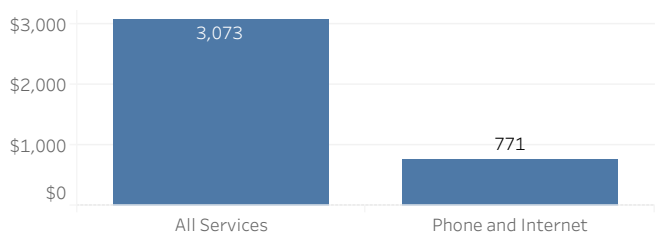


Due to different revenue streams, Telecom must decide which service bundle(s) customers to pursue

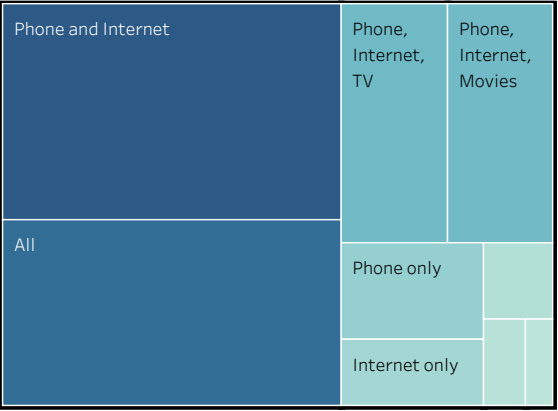
Tenure for Service Extremes



Total Charges for Service Extremes



Services for Leaving (1587 customers total)



All Services: \$101/month
Phone and Internet: \$71/month

There are two predominate service bundles -- "Phone and Internet" and "All Services." "All Services" has higher revenue per month than "Phone and Internet" by \$30/month (average total charges/average tenure).

As there is no cost data, this is just an item to keep in mind when looking at what service bundle group to pursue with promotions. One must keep in mind that "All Services" probably has higher costs.

Improving Churn Rate at TELECOM

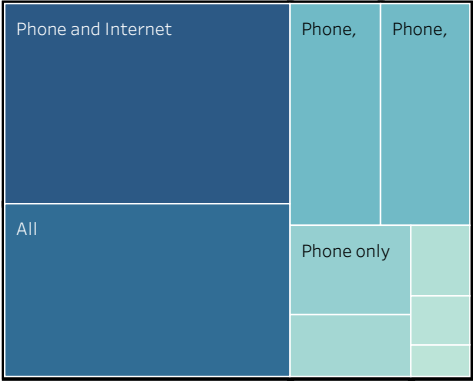
Find commonalities: monthly contracts, sma..	Finding commonalities (decision tree)	Choose which customers to pursue	Promote "All Services" and "Phone and Internet"	Time promotions by service bundle	Narrow price margins	Summary and the future
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"Phone and Internet" and "All Services" should be promoted because each represents roughly 1/3 of leaving customers

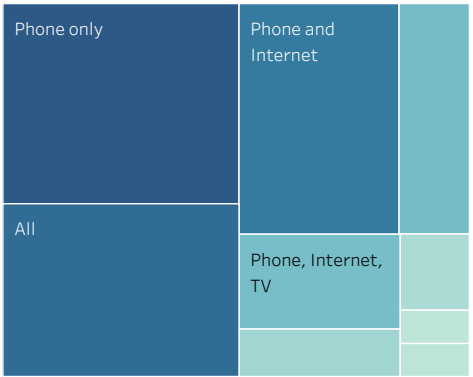
"Phone only" does not need to be improved, with an outstanding retention rate of 92%. However, the other categories range from 78% to 64% retention. This is especially problematic for the future of the staying customer base with the second and third largest categories, "Phone and Internet" and "All Services," having retention rates of 64% and 70% respectively.

Keep in mind improving one service bundle may improve other service bundles as well because they include the same services.

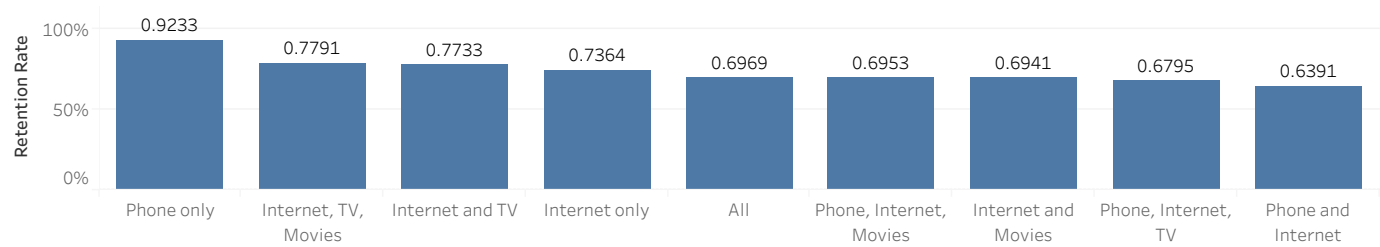
Services for Leaving (1587 customers total)



Services for Staying (4389 customers total)



Services Retention Rates



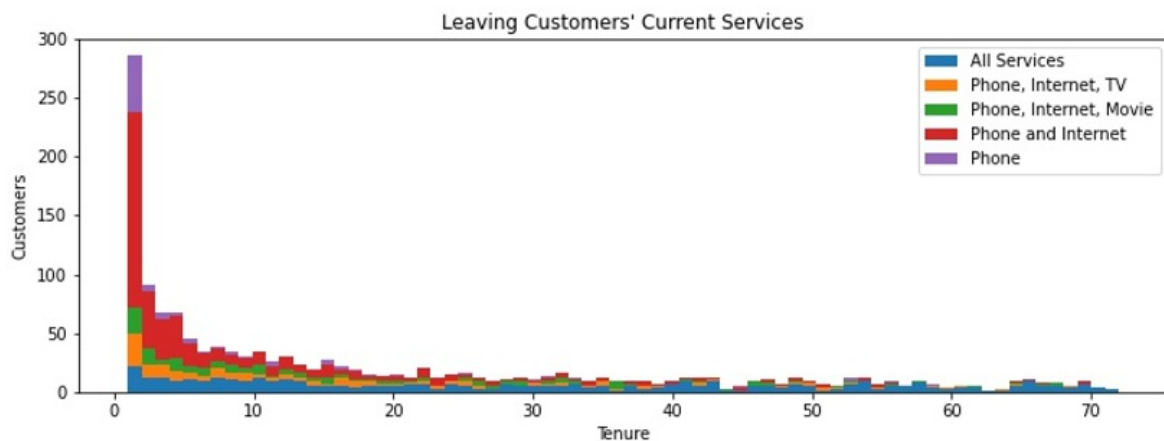
Improving Churn Rate at TELECOM

Find commonalities: monthl..	Finding commonalities (decision tree)	Choose which customers to pursue	Promote "All Services" and "Phone and Internet"	Time promotions by service bundle	Narrow price margins	Summary and the future
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Promotions should be timed to unique customer/tenure churn distributions for different service bundles

The tenure of leaving customers varies greatly with different service bundles. Leaving customers from "Phone and Internet" have been with the company for a shorter amount of time, spiking at a tenure of 1 month. This is probably due to initial promotions and subsequent customer dissatisfaction. "All Services" leaving customers come from tenures of the entire range, although slightly higher for tenures of 1 to roughly 15 months. "Phone, Internet, TV" and "Phone, Internet, Movie" lie somewhere between these two distributions, as the products offered are inbetween, also.

Low retention for "Phone and Internet" customers must be improved quickly by focusing on advertising, service improvement, or price reduction. One may consider a Loyalty program to keep these customers. "All Services," on the other hand, must also focus on early customers but doesn't need to segment the base by tenure as much when pursuing retention.



Improving Churn Rate at TELECOM

Find commonalities: monthl..	Finding commonalities (decision tree)	Choose which customers to pursue	Promote "All Services" and "Phone and Internet"	Time promotions by service bundle	Narrow price margins	Summary and the future
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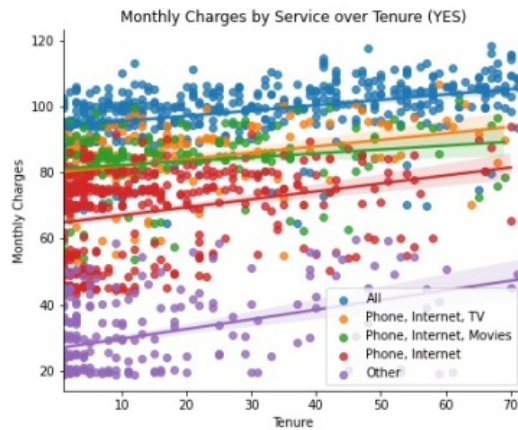
Narrowing price differences for service bundles could help churn

Graphs of customers and their monthly charge at the time of their last payment by tenure, grouped by service bundle. Lines are linear regressions for the service bundles.

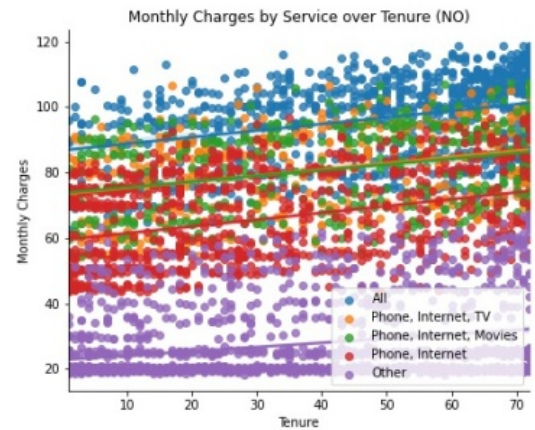
At all tenures, "All Services" and "Phone and Internet" are higher for leaving customers than staying customers. Higher rates for leaving over staying customers could be due to their preferences for fiber optic Internet and monthly contracts, but without more information it is impossible to know how much of the difference these preferences account for.

The fact that monthly charges are higher for those who spent more time with the company probably hurts retention.

Leaving



Staying



Improving Churn Rate at TELECOM

Find commonalities: monthl..	Finding commonalities (decision tree)	Choose which customers to pursue	Promote "All Services" and "Phone and Internet"	Time promotions by service bundle	Narrow price margins	Summary and the future
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RECOMMENDATIONS

~ Leaving customers can be described as tech savvy (and perhaps young), as they prefer electronic billing, fiber optic Internet, monthly contracts, and live in smaller households*

~ Use decision tree results to find pockets (described by demographics) of leaving customers

~ Two groups predominate the customer base of leaving customers -- "Phone and Internet" and "All Services"

~ Low retention rates for most products will erode into remaining customer base

~ Vastly different revenue streams must be considered when deciding which service bundle customers to pursue (and find some cost data!)

~ Retention methods must be adjusted to people of different tenures and service bundles. "Phone and Internet" and "All Services" do not match.

~ Investigate cause of different price margins between leaving and staying customers

~ To help retention, consider decreasing the higher prices for customers of longer tenures.

* demographic trends are similar for "Phone and Internet" and "All Services"

Average tenure of leaving customers is 18 months

Average total charges of a customer with a tenure of 18 months is \$1276

Roughly 1500 new customers leaving -> Convert 1/3 of them -> \$638,000 revenue over next 18 months