

AI-Powered Customer Churn Prediction & REVENUE PROTECTION

for ABC Multistate bank

Preventing \$2.2M+ Revenue Loss Through Predictive Analytics

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Project JOURNEY



*Initial Analysis:
Customer Segmentation*



*The Need for a Predictive
Approach*



*Advanced Analysis: AI-
Powered Churn Prediction*



*Final Action Plan &
Business Impact*

THE CHALLENGE

“

ABC Bank was losing high-value customers without warning. We needed to shift from reactive damage control to proactive retention.

1

*Descriptive Analysis:
who churned?*

2

*Predictive Intelligence:
who will churn?*

3

*Strategic Implementation:
How do we prevent it?*

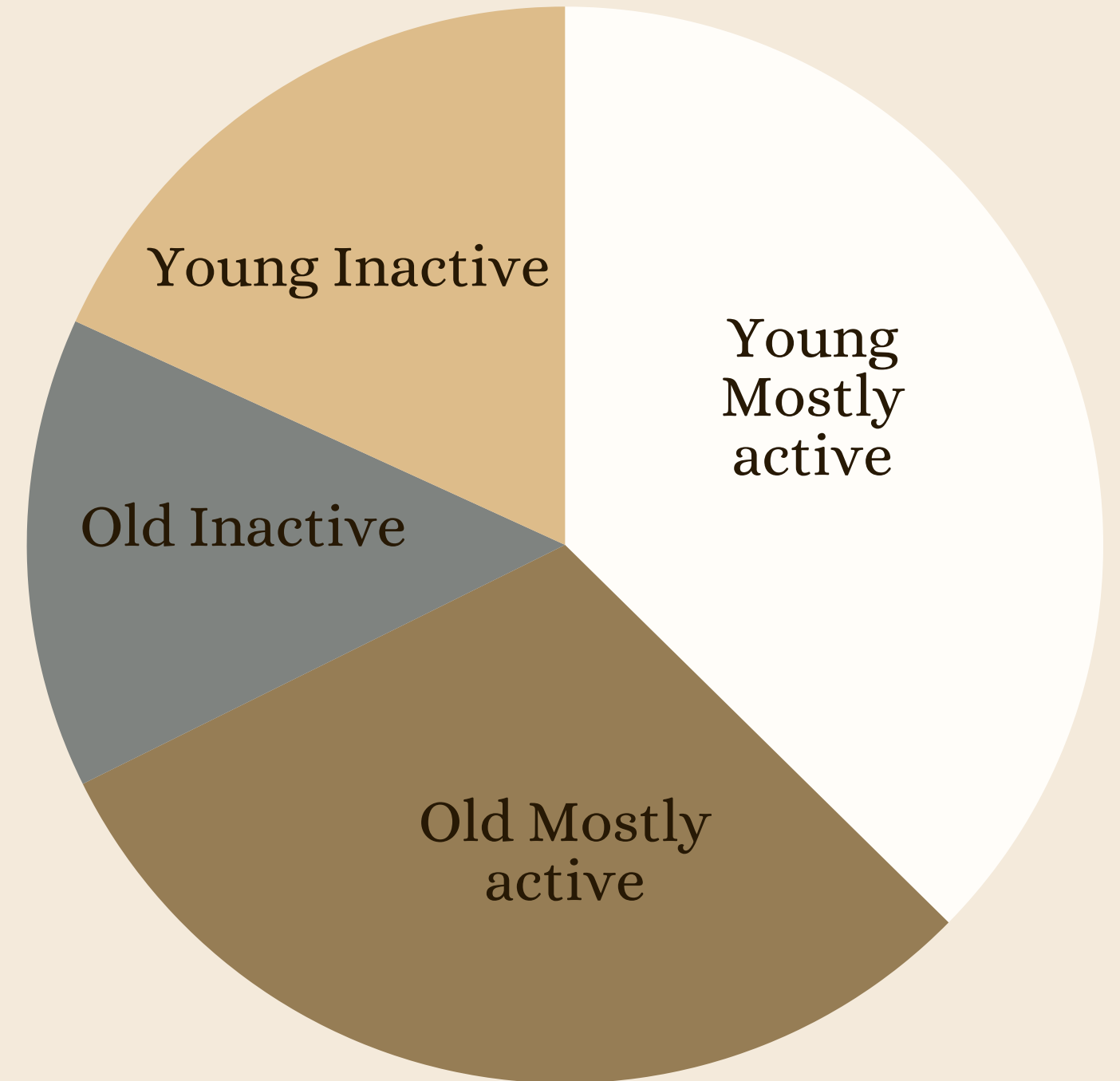
Success Metric:

Transform customer retention from **cost center** to **profit driver**

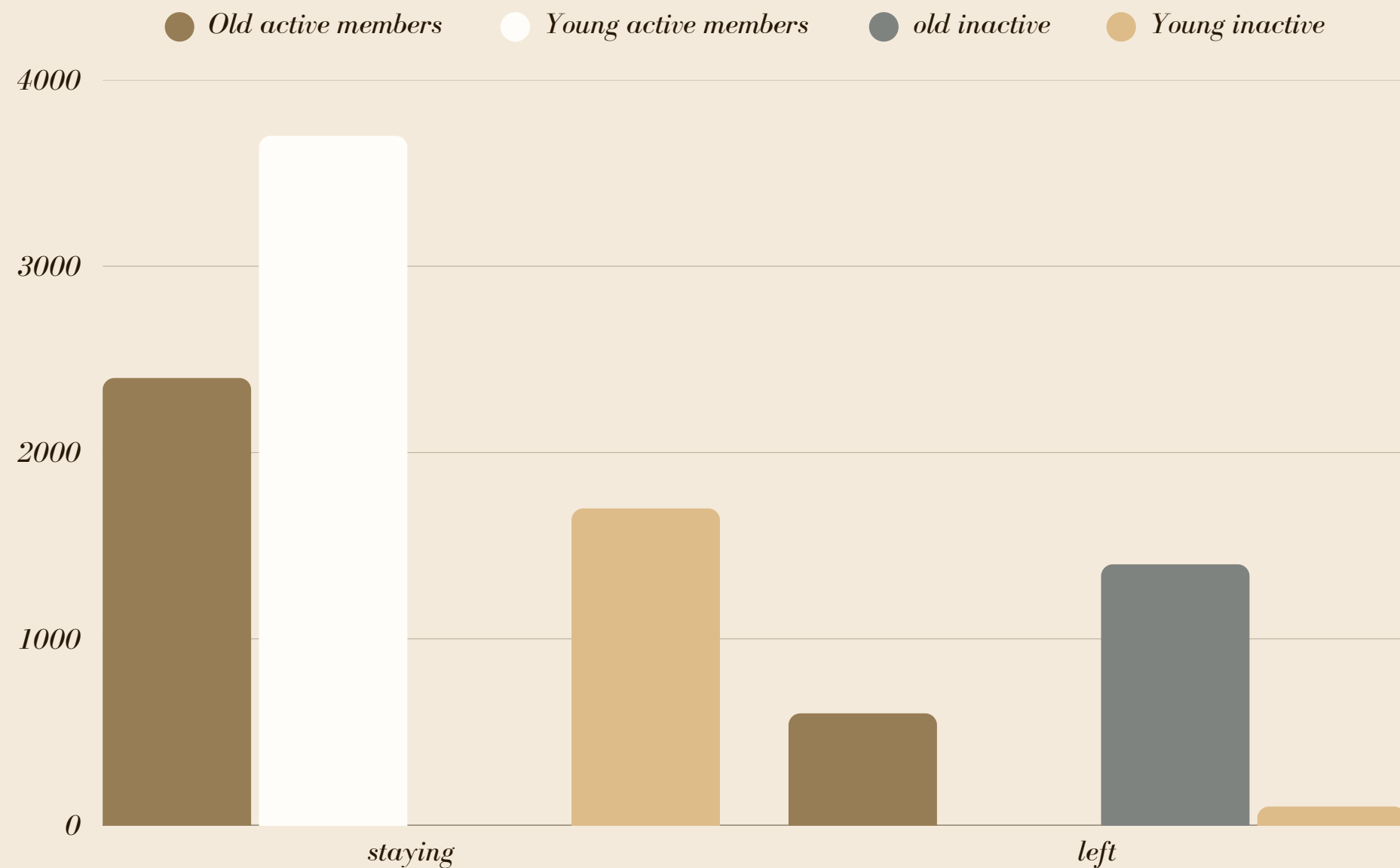
A First Look

WHO ARE THE CUSTOMERS?

Initial clustering revealed four distinct personas based on age and activity, providing a high-level overview of the customer base.



Customer Segmentation



100% CHURN RISK IDENTIFIED

Old Inactive segment completely lost

GEOGRAPHIC DISPARITIES

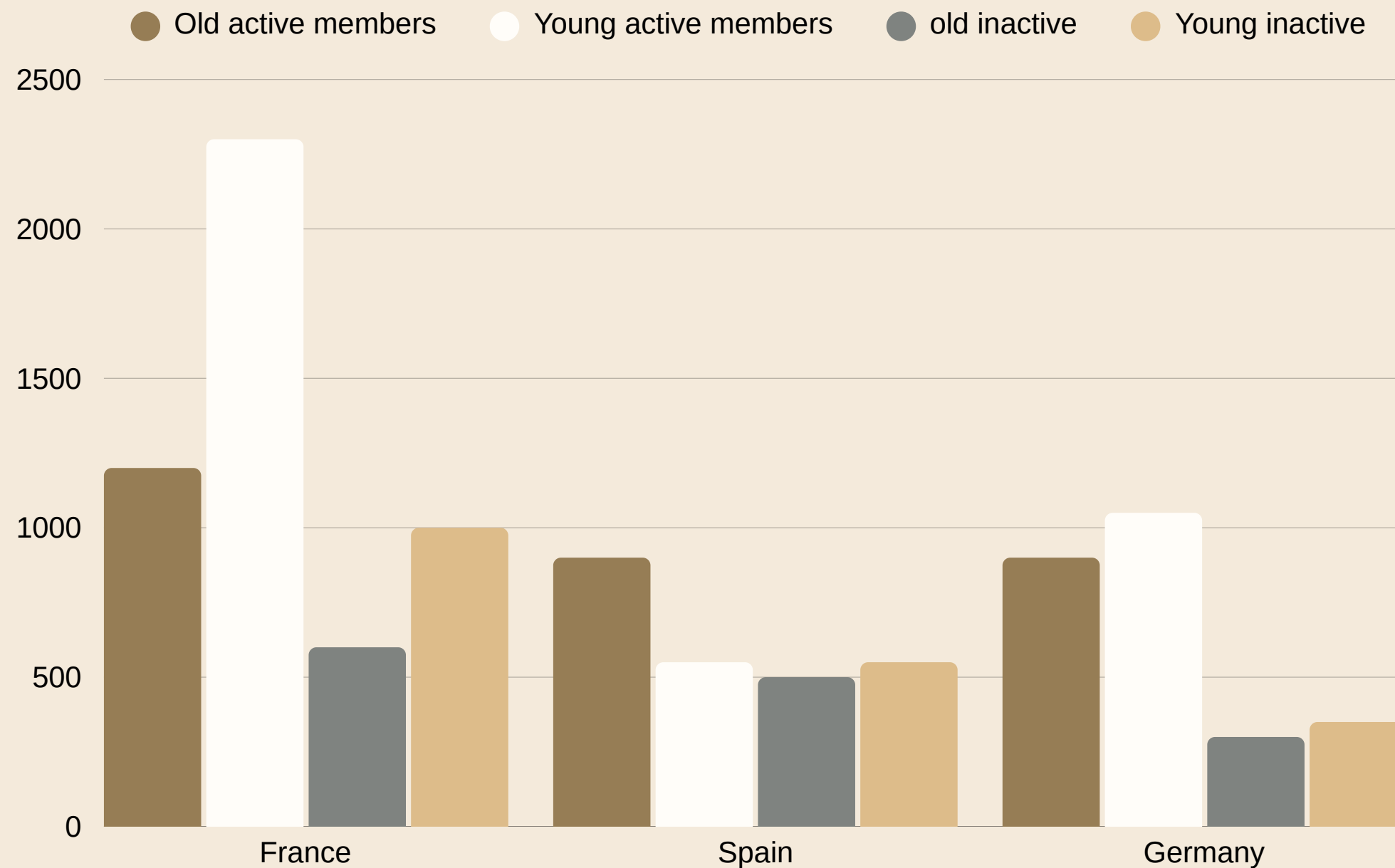
Spain market showing systematic issues

INCOME PARADOX

Inactive customers earn 25% more than active

"These insights raised critical questions that segmentation alone couldn't answer..."

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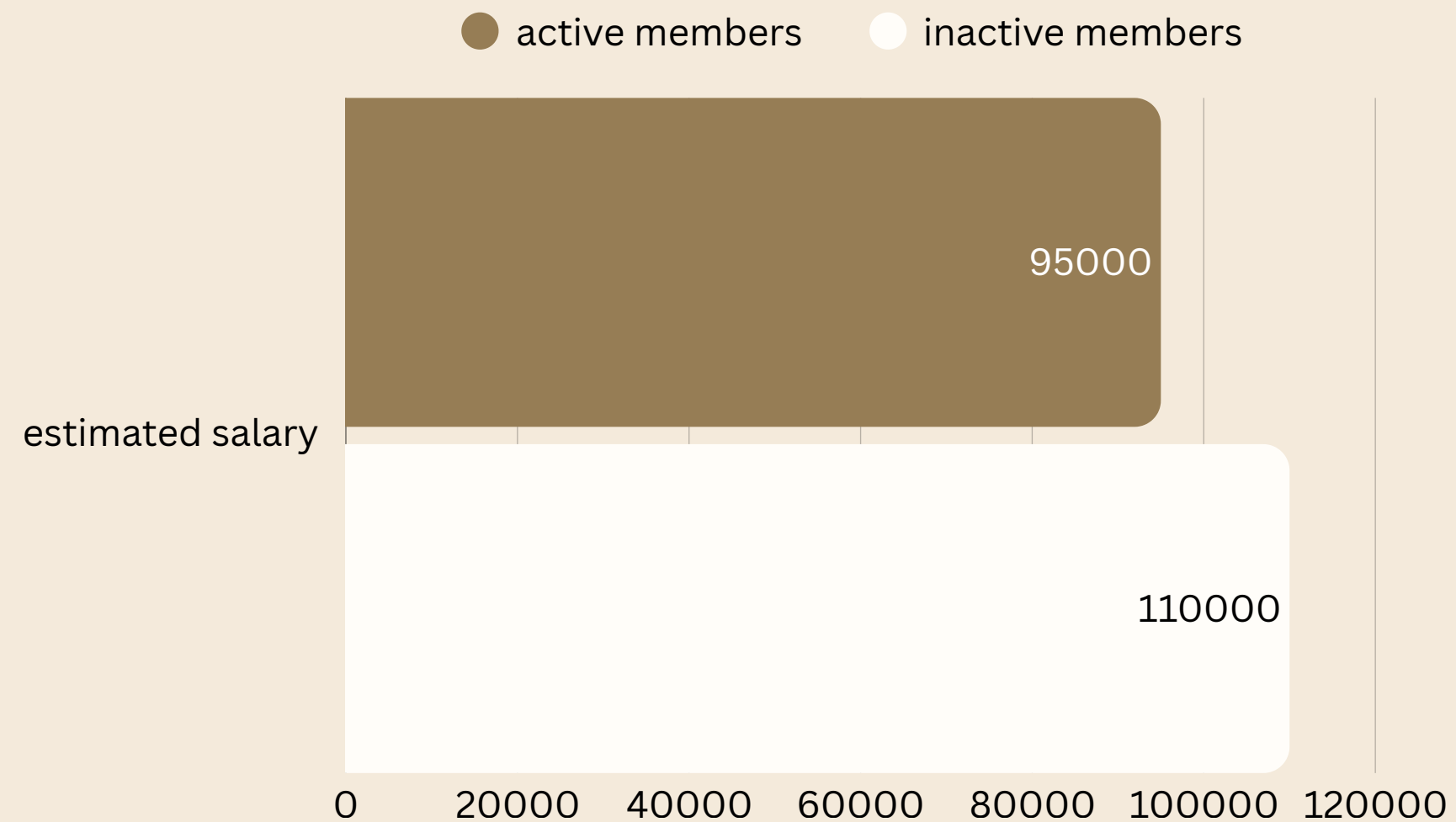
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The Predictive Intelligence Gap



Descriptive vs Predictive

Problem:

“Shows us who left, not who will leave”

Impact:

Cannot prioritize retention efforts



No Individual Risk Scoring

Problem:

“Broad segments, not personalized risk”

Impact:

Inefficient resource allocation



Financial Impact Unknown

Problem:

“No revenue quantification”

Impact:

Cannot justify retention budget



“We needed a predictive system that could identify risk before churn occurs”

Churn Prediction Model

0.851

ROC AUC



Industry Benchmark: >0.8 = Excellent



PERFORMANCE DASHBOARD



Accuracy
85.75%



Precision (Churn)
73%



Recall (Churn)
53%



F1-Score
0.61



“Correctly identify **85%** of
future churners before they
leave”

Root Cause Analysis



TOP 5 CHURN DRIVERS

1



AGE

Primary risk factor (older = higher risk)

2



PRODUCT COUNT

Sweet spot at exactly 2 products

3



ACTIVITY STATUS

Inactivity = early warning signal

4



ACCOUNT BALANCE

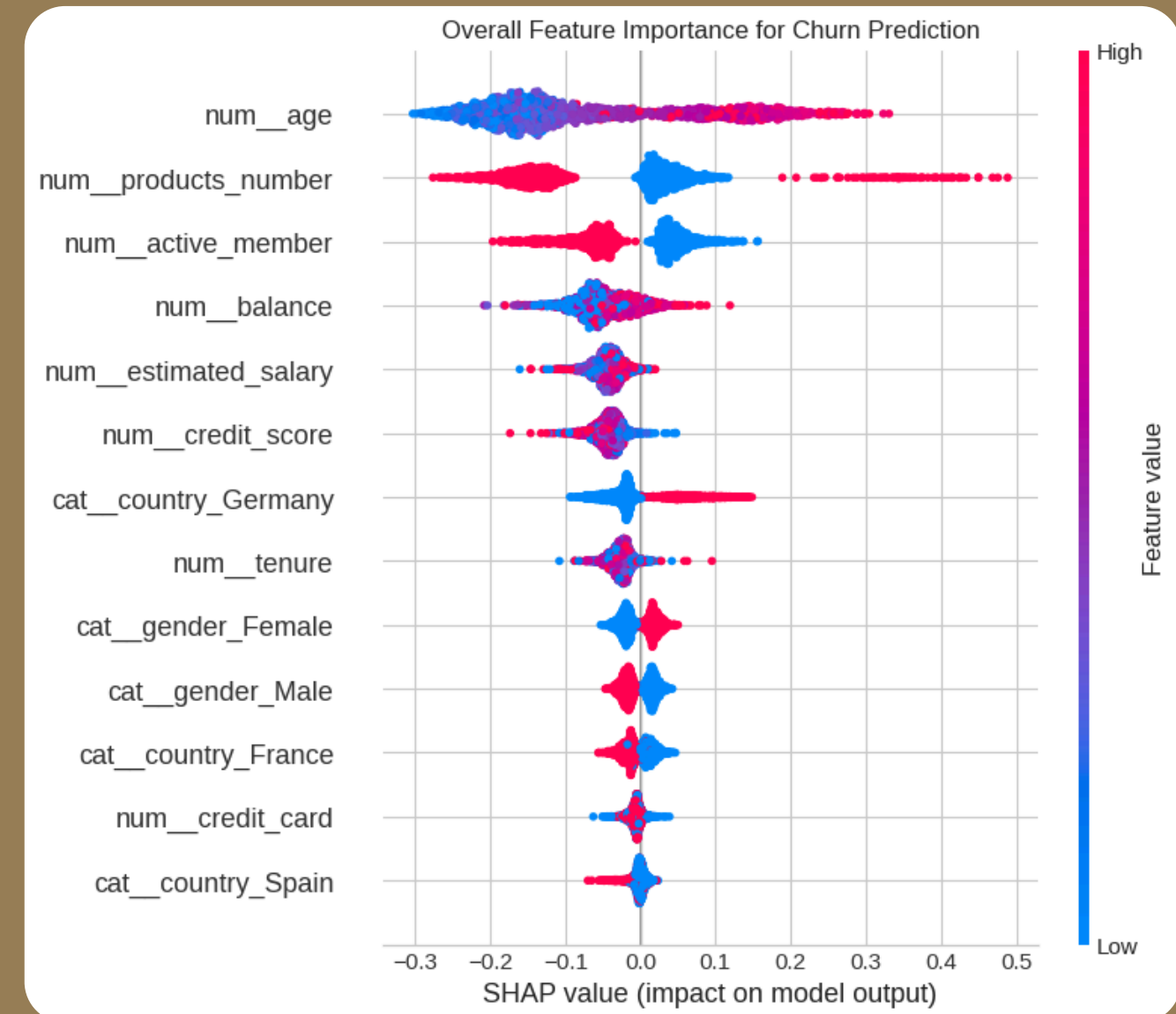
High balance without engagement = risk

!



GEOGRAPHY

Germany market requires investigation



KEY DISCOVERY

The **2-PRODUCT LOYALTY SWEET SPOT** - customers with exactly 2 products show lowest churn rates

High-Risk Customer Deep Dive



CUSTOMER PROFILE



Customer ID
#2092



Balance
\$250,898



Products
3



Status
Active Member



Churn Risk
70%



Annual Revenue
\$5,167



KEY INSIGHT

Despite being active with a **\$250K balance**, this customer has **70% churn probability** due to product complexity and service mismatch



ACTION REQUIRED

Premium concierge service assignment

Financial Impact

Revenue at Risk



\$453,845

Sample Size



20%

Total Annual
Impact



\$2.27M

High-Risk
Customers



405



Revenue Calculation Model:

$\text{Annual Revenue} = \text{Balance} \times 2\% + \text{Products} \times \$50 + \text{Credit Card} \times \100





Campaign cost: \$50/customer • Potential savings: \$1,125/customer

Retention Strategy

Concierge Program





 **Expected ROI: 10:1**

-  **TARGET** Wealthy but Underserved (Balance >\$150K + High Risk)
-  **ACTION** Dedicated relationship manager

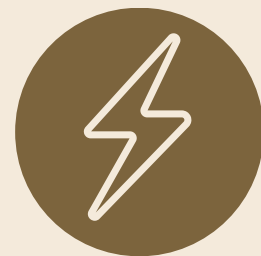
Product Optimization





 **Churn reduction: 15%**

-  **TARGET** 1-product (under-engaged) + 3+ product (overwhelmed) customers
-  **ACTION** Guide to 2-product sweet spot

Wake-Up Campaign





 **Reactivation rate: 25%**

-  **TARGET** Inactive members with >50% churn probability
-  **ACTION** Multi-channel re-engagement with incentives

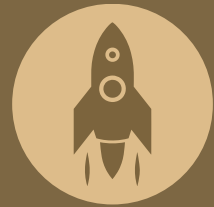
German Market



 **Timeline: 90-day review**

-  **TARGET** Address systematic geographic risk factor
-  **ACTION** Regional analysis and localized solutions

Implementation Roadmap



MONTH 1

- Deploy high-risk customer alerts
- Launch concierge program for top 50 customers
- Begin German market research



MONTH 2

- Product optimization messaging
- Inactive member reactivation campaigns
- A/B testing framework implementation



MONTH 3

- Campaign performance analysis
- Model renelement with new data
- Full rollout of successful interventions



SUCCESS METRICS



Churn Rate Reduction



Revenue Retention



Campaign ROI

Project Impact



TECHNICAL INNOVATION

- Production-ready ML pipeline (**0.851 AUC**)
- Explainable AI for regulatory compliance
- Advanced feature engineering



BUSINESS IMPACT

- Quantified **\$2.2M** revenue at risk
- Individual customer risk profiles
- ROI-positive retention strategies



STRATEGIC EXECUTION

- ML insights to executive recommendations
- Measurable, time-bound implementation plan
- Framework for continuous optimization



NEXT STEPS

Deploy model for real-time risk monitoring and campaign automation