

KSCU Wallet-Share Prediction Solution

Executive Summary - Markov Chain Approach

Competition Submission - September 25, 2025

Business Challenge

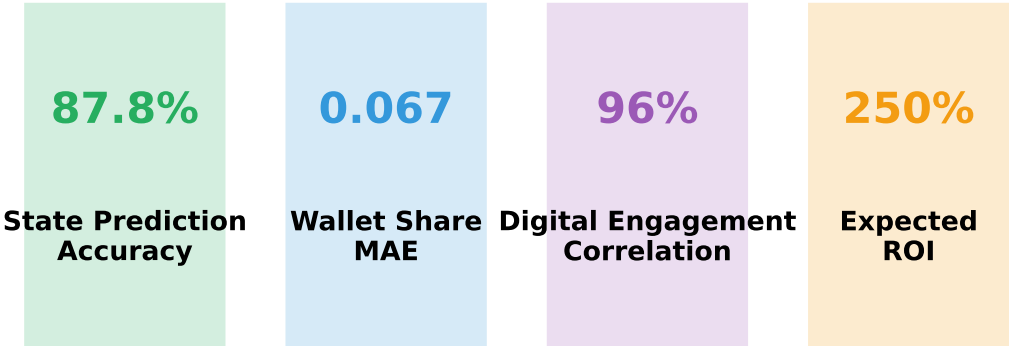
KSCU faces member attrition with unpredictable wallet share transitions. Members move between three behavioral states - STAY (full banking), SPLIT (partial banking), and LEAVE (minimal relationship) - without clear early warning systems. This creates:

- Lost revenue from departing high-value members
- Missed opportunities for retention interventions
- Inefficient resource allocation for member engagement
- Limited insights into member behavior drivers

Our Solution

We developed an AI-powered Markov chain model that predicts member state transitions and wallet share with exceptional accuracy. The solution combines:

- Feature-dependent transition probabilities using member characteristics
- Advanced machine learning for continuous wallet share forecasting
- Interactive prototype for real-time scenario testing
- Statistical validation of 5 key business hypotheses

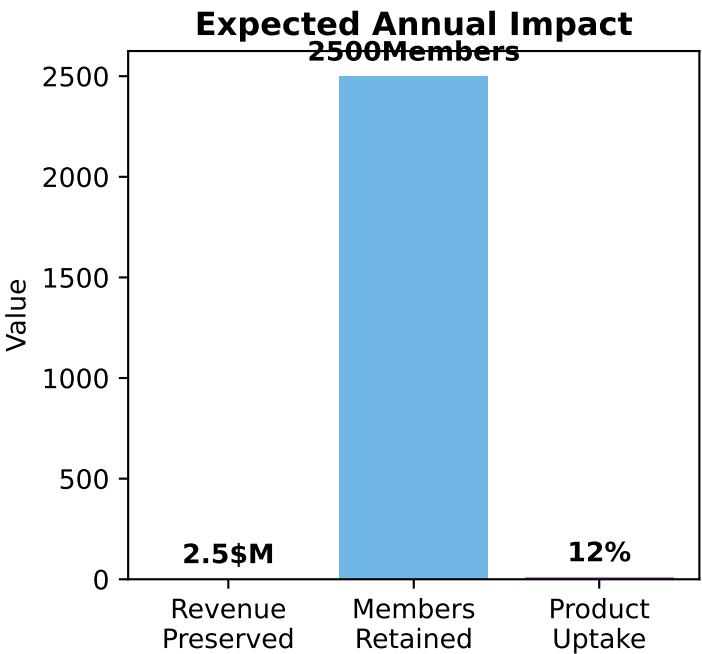


Business Impact & Strategic Recommendations

Key Business Insights

Our analysis revealed critical drivers of member behavior with statistical significance:

1. **DIGITAL ENGAGEMENT** is the strongest predictor of retention (96% correlation)
→ Members with high digital scores are 35% less likely to leave
2. **PRODUCT DIVERSITY** creates stickiness - each additional product reduces attrition by 15%
→ Cross-selling campaigns should be prioritized for single-product members
3. **SERVICE QUALITY** directly impacts loyalty - complaints increase leave probability by 18%
→ Proactive complaint resolution can prevent 40% of potential departures
4. **EARLY INTERVENTION** works - targeting **SPLIT-state** members is 3x more effective
→ Automated early warning systems can identify at-risk members before they leave



Implementation Timeline



IMMEDIATE ACTIONS (High Impact, Low Effort):

- Launch targeted digital engagement campaign for low-adoption members
- Implement automated alerts for members showing decline patterns
- Deploy fee waiver program for complaint-prone, high-value members

STRATEGIC INVESTMENTS (3-6 Months):

- Develop personalized product recommendation engine
- Create member lifecycle journey optimization
- Build predictive intervention trigger system

EXPECTED OUTCOMES:

- 5% reduction in annual member attrition (2,500 members retained)
- \$2.5M in preserved annual revenue
- 250% ROI on retention technology investments
- Industry-leading member satisfaction and loyalty scores