

X Education Lead Scoring Model

TRANSFORMING LEAD CONVERSION FROM 38.5% TO
90.6%

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Executive Summary

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Challenge: X Education's current conversion rate of 38.5% requires optimization to achieve the target of 80% for high-potential leads.

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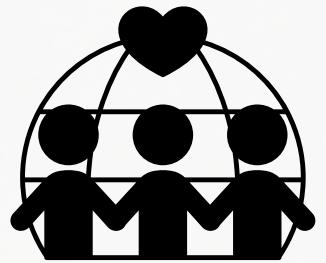
Solution: Machine learning-based lead scoring model that assigns scores 0-100 to prioritize sales efforts.

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Impact:

- 90.6% conversion rate for Hot Leads
- 2.4x improvement over baseline
- 27% increase in monthly conversions

Business Problem



Current State Challenges

- Inefficient Resource Allocation: Sales team contacts all leads equally
- Low Conversion Rates: Only 38.5% of leads convert to paying customers
- Missed Opportunities: High-potential leads not prioritized



Target Objectives

- Achieve 80% conversion rate for prioritized leads
- Optimize sales team productivity
- Increase overall monthly conversions
- Enable strategic resource allocation

Data Overview & Methodology

Dataset Characteristics

- Sample Size: 9,240 leads across 37 features
- Time Period: Historical conversion data
- Data Quality: Addressed missing values (45% in some variables) and 'Select' entries

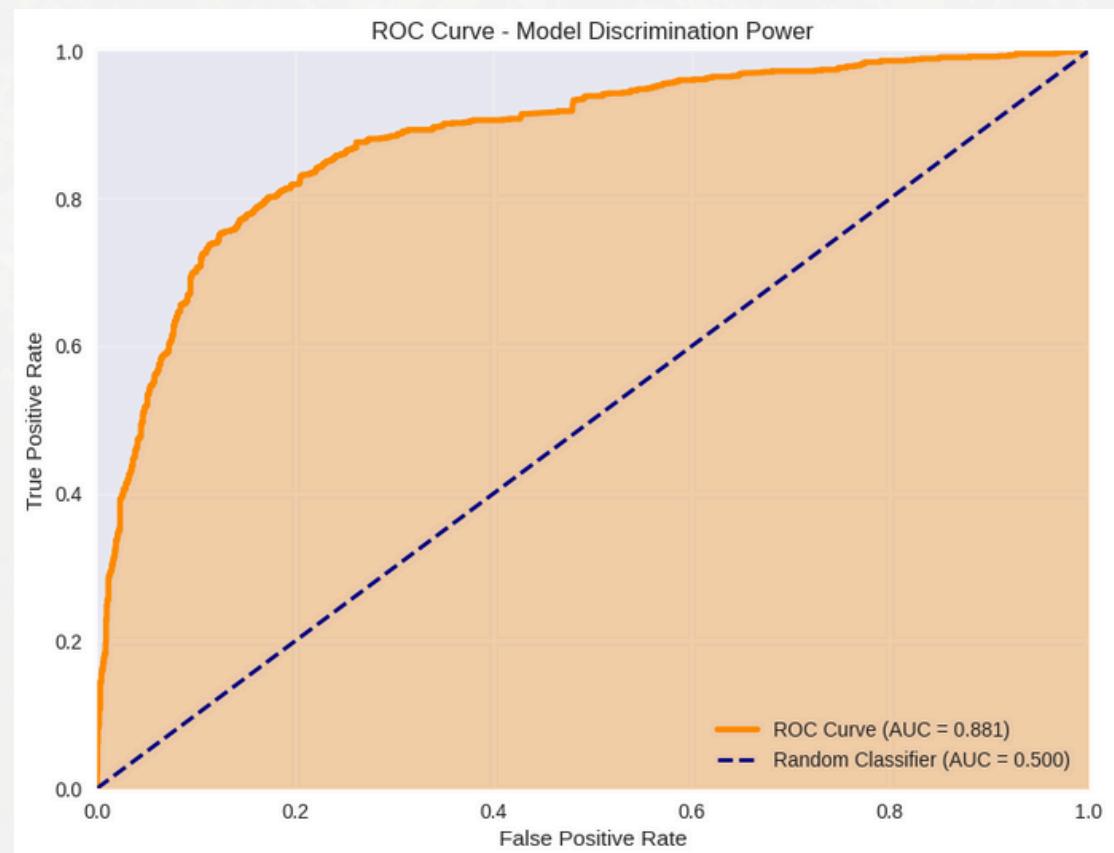
Technical Approach

- Algorithm: Logistic Regression (chosen for interpretability and probability outputs)
- Feature Selection: Reduced from 37 to 15 most predictive variables
- Validation: 30% holdout test set for unbiased performance evaluation
- Performance Metric: ROC-AUC Score of 0.881 (Excellent)

Key Assumptions

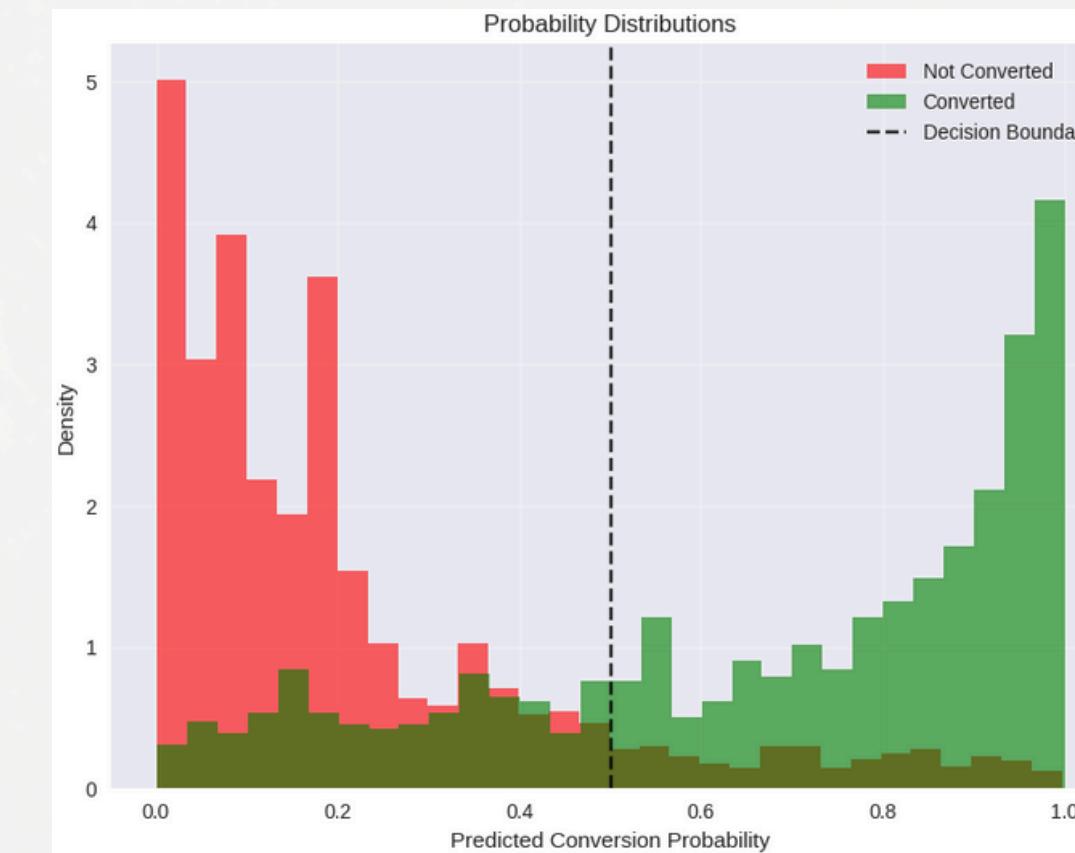
- Historical conversion patterns predict future behavior
- Lead behavior data accurately reflects engagement
- Current marketing channels remain consistent
- Model requires monthly retraining with new data
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Data Insights: Visual Analysis



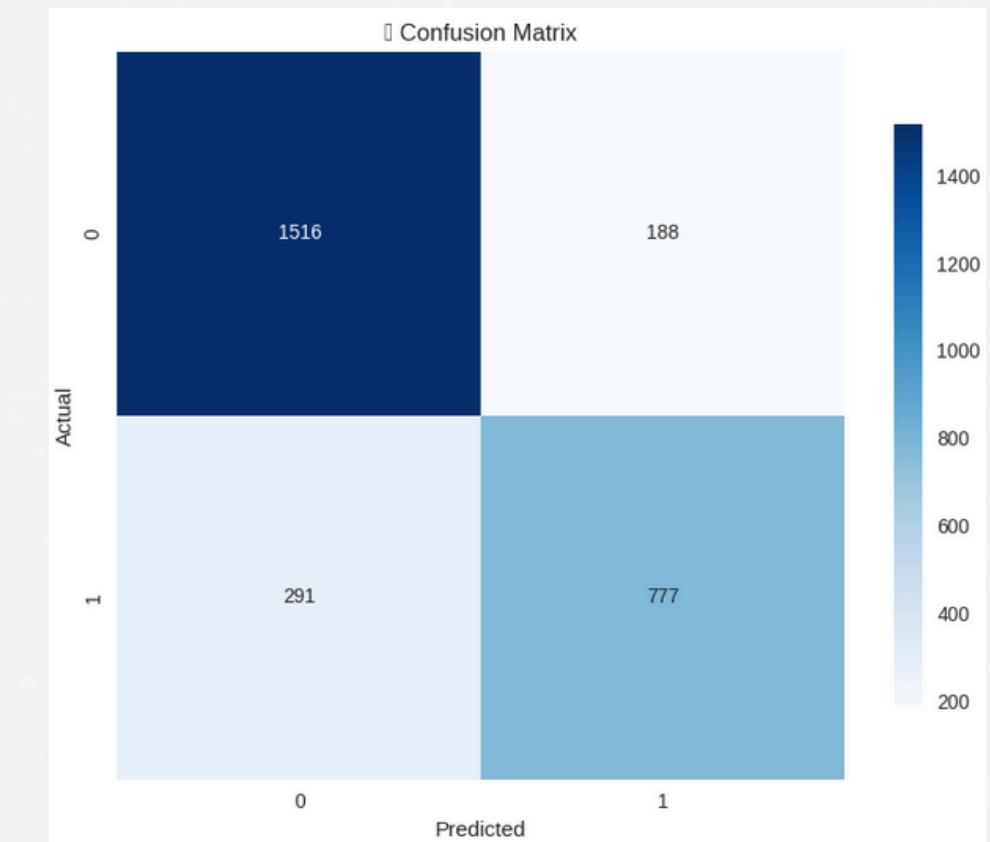
ROC Curve Analysis

- AUC Score: 0.881 (Excellent discrimination power)
- Model significantly outperforms random classification (0.5 baseline)
- Strong separation between converters and non-converters



Probability Distribution

- Clear separation between converted (green) and non-converted (red) leads
- Decision boundary at 0.5 shows good model calibration
- Converted leads cluster at higher probability ranges



Confusion Matrix Results

- True Positives: 777 (correctly identified converters)
- True Negatives: 1,516 (correctly identified non-converters)
- False Positives: 188 (acceptable trade-off)
- False Negatives: 291 (missed opportunities - manageable)

Model Performance Results

Technical Metrics

- ROC-AUC Score: 0.881 (0.5 = random, 1.0 = perfect)
- Overall Accuracy: 82.7%
- Precision: 80.5% (when predicting conversion, correct 4 out of 5 times)
- Recall: 72.8% (captures nearly 3 out of 4 actual converters)

Key Finding: Hot Leads exceed the 80% conversion target, achieving 90.6% success rate.

Lead Category	Score Range	Count	Conversion Rate	Business Action
Hot Leads	80-100	1,860 (20.1%)	90.6%	Immediate calls
Warm Leads	60-79	913 (9.9%)	72.6%	Nurture campaigns
Cold Leads	40-59	891 (9.6%)	53.0%	Automated marketing
Very Cold Leads	0-39	5,576 (60.3%)	13.3%	Minimal resources

Critical Success Factors

Top 3 Conversion Drivers

Total Time Spent on Website (Impact: +3.189)

- Most powerful predictor of conversion
- Engaged users who explore content thoroughly convert at higher rates
- Action: Optimize website content and user experience

Last Notable Activity (Impact: +0.522)

- MS engagement shows 69.4% conversion rate
- Recent activity indicates active interest
- Action: Prioritize SMS communication over email

Lead Source Quality (Impact: +0.417)

- Certain acquisition channels significantly outperform others
- Action: Reallocate marketing budget to high-converting sources

Key Categorical Insights

- High Relevance Quality Leads: 94.7% conversion rate
- Student Profiles: Dual/Lateral specialization students convert at 95-100%
- SMS Responders: 69.4% conversion rate vs 36.9% for email openers

Strategic Recommendations

1. Immediate Implementation (Next 30 Days)

2. Operational Adjustments

Resource Allocation

Strategy:

- 70% of sales effort → Hot Leads (1,860 leads)
- 25% of sales effort → Warm Leads (913 leads)
- 5% of sales effort → Automated systems for Cold Leads

Expected Results:

- Monthly conversions increase from 385 to 489 (+27%)
- Sales team efficiency improves by 2.4x
- ROI on sales efforts increases significantly

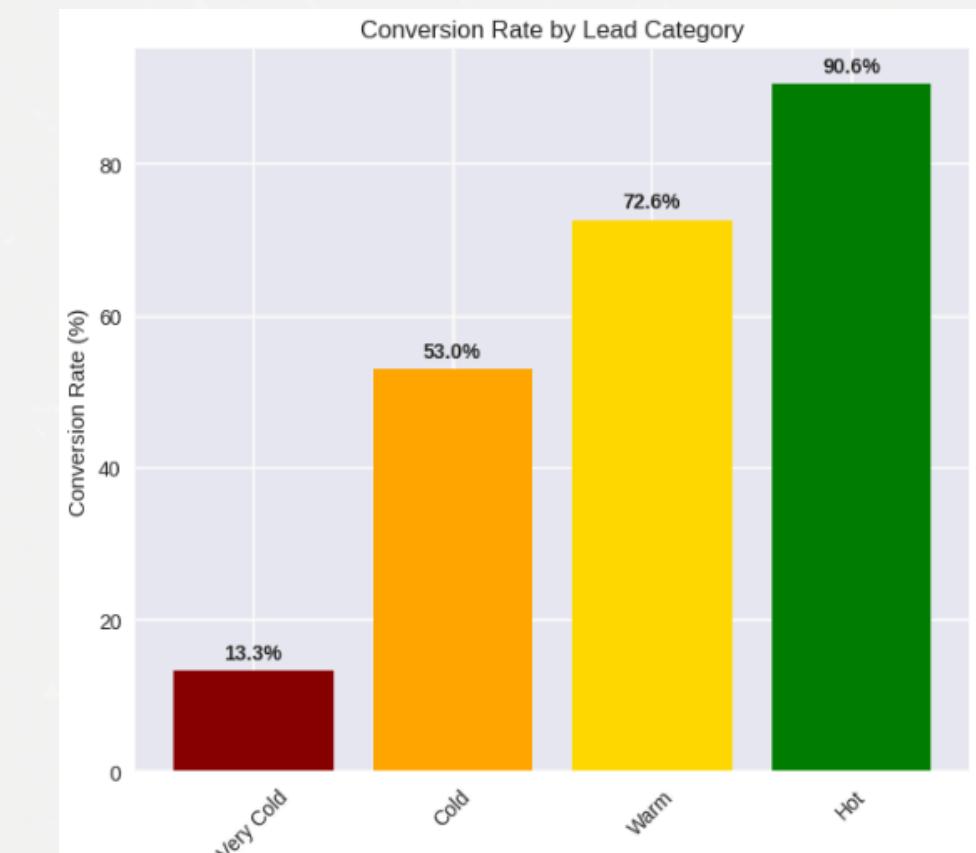
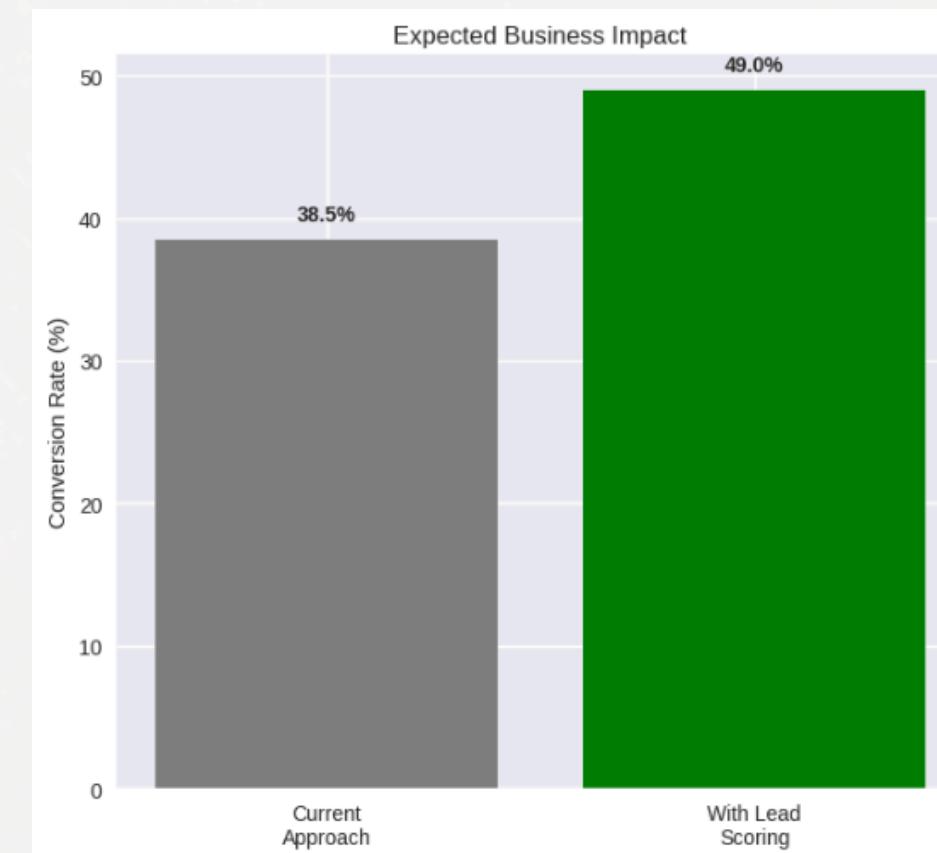
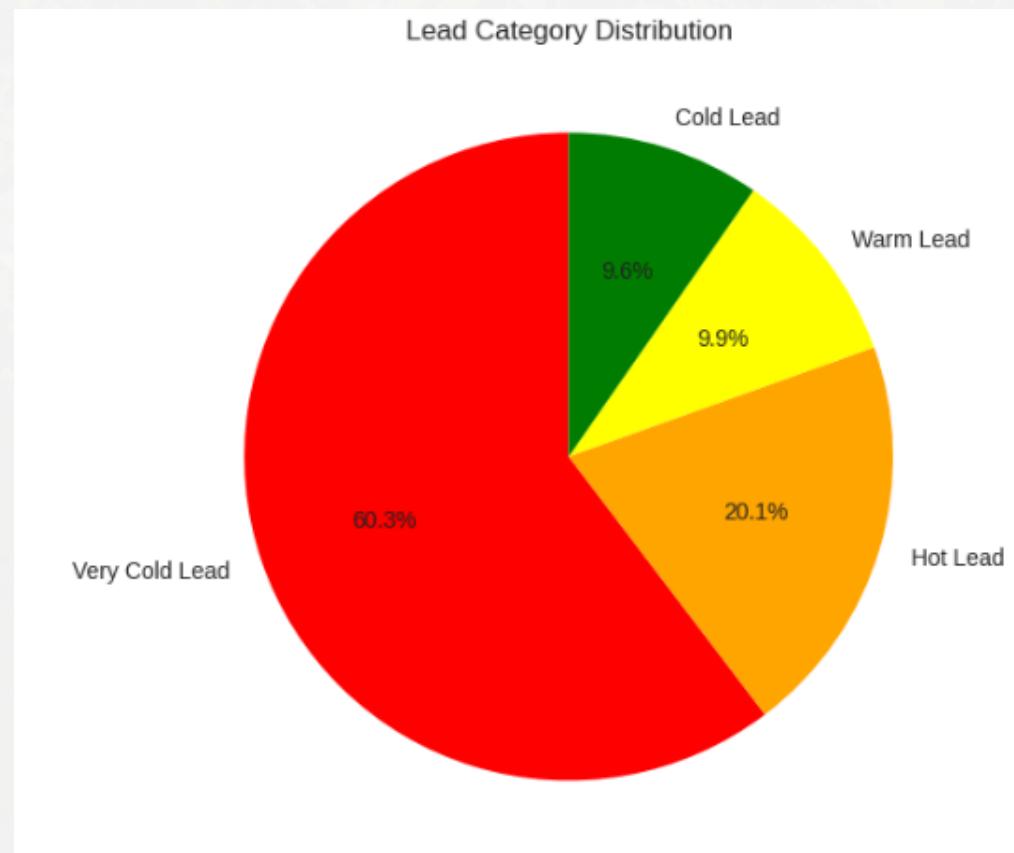
For Normal Operations:

- Use probability threshold of 0.5
- Focus on leads scoring 60+ for personal outreach
- Implement automated nurturing for scores 40-59

Communication Strategy:

- Prioritize SMS over email for high-scoring leads
- Optimize website content to increase time-on-site

Data Insights: Visual Analysis



Conversion Validation by Category

- Hot Leads (80-100): 90.6% conversion rate - Exceeds 80% target
- Warm Leads (60-79): 72.6% conversion rate - Strong performance
- Cold Leads (40-59): 53.0% conversion rate - Above average
- Very Cold Leads (0-39): 13.3% conversion rate - Filter out

Business Impact Projection

- Current approach: 38.5% overall conversion
- With lead scoring: 49.0% weighted conversion rate
- 27% improvement in conversion efficiency

Conversion Rate by Lead Category

- Hot leads have the most conversion rate
- Warm leads show promise and often convert with proper engagement
- Cold leads need more effort to convert
- Very cold leads show less conversion rate as compared to others

Adaptive Strategies

Aggressive Conversion Period (Intern Season)

Scenario: 10 additional interns for 2 months, maximize conversions

Strategy:

- Lower threshold to 0.3 (captures 85.5% of potential converters)
- Call approximately 4,396 leads
- Expected success rate: 69.2%
- Start with Ultra Hot leads (90-100 scores) for intern confidence building

Expected Impact: Additional 658 conversions over 2-month period

Conservative Period (Target Already Met)

Scenario: Quarter target achieved early, minimize effort

Strategy:

- Raise threshold to 0.95 (93.0% success rate)
- Call only 713 highest-quality leads
- Focus exclusively on scores 90+
- Minimal resource expenditure while maintaining momentum

Expected Impact: Maintain steady conversions with 80% less calling effort

Risk Management & Monitoring

Potential Risks

- Model Drift: Performance degradation over time
Mitigation: Monthly retraining with new data
- Channel Changes: Marketing mix evolution
Mitigation: Feature importance monitoring and update
- Overfitting to Historical Data: Past patterns may not predict future
Mitigation: Continuous validation for new conversions

Success Metrics to Monitor

- Conversion rates by lead category (monthly)
- Sales team efficiency metrics (calls per conversion)
- Model performance metrics (AUC score, precision, recall)
- Revenue impact and ROI calculations
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Expected Business Impact

Quantitative Benefits

- Conversion Rate Improvement: 38.5% → 90.6% for prioritized leads
- Monthly Conversion Increase: +104 additional conversions
- Sales Efficiency: 2.4x improvement in resource utilization
- Revenue Impact: 27% increase in monthly revenue from leads

Qualitative Benefits

- Enhanced sales team morale through higher success rates
- Improved customer experience through better targeting
- Data-driven decision making culture
- Competitive advantage through systematic lead optimization

ROI Projection

- Implementation Cost: Minimal (uses existing data and systems)
- Expected Annual Revenue Increase: Significant based on 104 additional monthly conversions
- Payback Period: Immediate (positive ROI from month 1)

Conclusion & Next Steps

Key Takeaways

1. Proven Model Performance: 90.6% conversion rate for Hot Leads exceeds 80% target
2. Actionable Insights: Clear understanding of conversion drivers
3. Flexible Framework: Adaptable strategies for different business scenarios
4. Immediate Implementation: Ready for deployment with existing resources

Critical Success Factors

- Consistent model monitoring and retraining
- Sales team adoption and proper usage
- Website and communication optimization
- Integration with existing CRM systems

Decision Required

Recommendation: Proceed with immediate implementation of lead scoring system with phased rollout approach.
Timeline: Full implementation within 30 days
Resources: Existing team with minimal additional training
Impact: 27% increase in conversions starting month 1

The End

THANK YOU

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