

Lead Scoring Case Study – Summary

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Objective

X Education aims to enhance its lead conversion process by developing a **Lead Scoring Model**. This model predicts the likelihood of a lead converting into a customer, enabling the sales team to prioritize high-potential leads efficiently. The goal is to **increase conversion rates, optimize resource allocation, and enhance sales productivity**.

Business Problem

- X Education receives numerous leads from various sources such as **websites, references, and advertisements**.
 - The sales team needs a systematic way to **prioritize calling high-potential leads** while minimizing time spent on low-quality leads.
 - During **peak sales periods (intern onboarding)**, the company wants to maximize conversions.
 - When quarterly targets are met, the company seeks to **minimize unnecessary calls** and focus on other productive tasks.
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Data Overview & Preprocessing

The dataset includes **lead attributes** such as:

- **Lead Source** (Website, Reference, Landing Page Submission, etc.)
- **Current Occupation** (Working Professional, Student, Unemployed)
- **Total Time Spent on Website** (Engagement metric)
- **Last Activity** (Email Opened, SMS Sent, etc.)
- **Specialization & Lead Origin** (Course-related details)

Preprocessing Steps:

- Handling missing values
- Encoding categorical variables

- Feature scaling for continuous variables
 - Splitting data into **train & test sets**
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Model Development

A **Logistic Regression Model** was selected for its interpretability and efficiency. The model was trained using **lead attributes** to predict conversion probability. Feature selection was performed based on **coefficient values** to retain the most impactful variables.

Key Performance Metrics:

- **Train Data Set:**
 - Accuracy: 76.93%
 - Sensitivity: 80.86%
 - Specificity: 74.51%
 - **Test Data Set:**
 - Accuracy: 76.33%
 - Sensitivity: 78.72% ($\approx 80\%$)
 - Specificity: 74.78%
 - The evaluation metrics are closely aligned across training and test datasets, indicating a well-generalized model.
 - The model achieved a sensitivity of 80.86% (train) and 78.72% (test) with a cut-off value of 0.414, meeting the CEO's target of $\sim 80\%$ sensitivity.
 - The accuracy of 76.33% aligns with the study's objectives.
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Key Findings - Top Variables Influencing Conversion

The three most critical variables affecting lead conversion are:

1. **Lead Source**
 - Leads from trusted sources (e.g., Welingak Website, Reference) have the highest conversion rates.
 - Business Impact: Focus marketing efforts on high-performing sources.
2. **Current Occupation**

- Working professionals are the most likely to convert.
- Business Impact: Design targeted campaigns and corporate tie-ups.

3. Total Time Spent on Website

- A strong engagement indicator—longer time spent suggests serious intent.
 - Business Impact: Retarget high-engagement leads who haven't converted.
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Strategy Recommendations

1. Peak Sales Period (Intern Onboarding)

- Lower the model's prediction threshold to increase lead classification and maximize conversions.
- Focus on high-priority leads, prioritizing calls based on conversion probability.
- Implement a multi-channel approach (WhatsApp, email follow-ups, SMS reminders).

2. Post-Target Achievement (Minimizing Calls)

- Raise the threshold to only call high-intent leads.
 - Use automated emails, chatbots, and scheduled call-back options to filter inquiries.
 - Interns focus on customer nurturing & upselling instead of unnecessary calls.
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Recommendations for Increasing Lead Conversion Rates

- Focus on features with positive coefficients for targeted marketing strategies.
- Develop strategies to attract high-quality leads from top-performing sources.
- Engage working professionals with tailored messaging.
- Optimize communication channels based on lead engagement impact.
- Increase advertising spend on Welingak Website for better lead acquisition.
- Offer incentives/discounts for referrals to encourage more high-quality references.
- Aggressively target working professionals as they have a high conversion rate and better financial capability to afford premium courses.

Identifying Areas for Improvement

- Analyze negative coefficients in specialization offerings to understand low-performing courses.

- Review the landing page submission process to improve lead quality and engagement.
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Business Impact

- Higher Sales Efficiency: Sales teams can focus on leads with the highest conversion probability.
 - Improved Lead Prioritization: Data-driven approach ensures resource optimization.
 - Reduced Wastage: Eliminates unnecessary efforts on low-conversion leads.
 - Enhanced Customer Targeting: AI-driven insights refine marketing strategies.
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Final Conclusion

The Lead Scoring Model provides a data-backed strategy for X Education to increase conversions while optimizing sales efforts. By implementing dynamic lead prioritization, X Education can enhance its overall ROI and customer acquisition efficiency.