Business Case Study: Implementing AI in Customer Service at VELTEX

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Company Profile

VELTEX is a mid-sized fashion retailer based in Madrid, operating 50 physical stores across Spain and Portugal. With a growing online presence, VELTEX generated 42 million in revenue last year. The company positions itself as a fast-fashion brand, competing with global players while retaining a regional identity.

Departmental Focus: Customer Service

VELTEX's customer service department, consisting of 25 employees, has been under pressure due to the increasing volume of online inquiries. Customers report long response times (average of 18 hours) and inconsistent service quality. This has negatively impacted customer retention and online reviews.

Challenge

VELTEX's executive team is looking for a technological solution to improve response times, reduce operational costs, and enhance customer satisfaction—without compromising service quality.

Proposed AI Integration

The company is considering the deployment of an AI-driven chatbot and sentiment analysis tools. The plan includes:

- Implementing a multilingual chatbot to answer FAQs and process simple requests (e.g., returns, tracking).

- Using sentiment analysis to flag negative interactions and prioritize them for human agents.

- Integrating AI insights into CRM for personalized customer interactions.

Implementation Plan

- **Q1:** Vendor selection and data cleaning

- **Q2:** Pilot launch of chatbot on Spanish-language platform

- **Q3:** Expand to Portuguese site, integrate sentiment monitoring

- **Q4:** Full CRM integration and staff retraining

Expected Impact

- Reduce average response time from 18 to 3 hours

- Increase Net Promoter Score (NPS) from 38 to 60

- Reduce operational costs by 25%

Fictional Financials

Balance Sheet – End of Year (in thousands)

Assets	Current Year	Previous Year
Cash	4,200	3,100
Accounts Receivable	1,500	1,700
Inventory	6,800	7,300
Property, Plant, Equipment	12,000	11,000
Total Assets	**24,500**	**23,100**
Liabilities & Equity		
Accounts Payable	2,600	2,300
Short-term Loans	1,400	1,800
Long-term Debt	5,000	4,800
Shareholder Equity	15,500	14,200
Total Liabilities & Equity	**24,500**	**23,100**

Profit and Loss Statement (in thousands)

Item	Current Year	Previous Year
Revenue	42,000	38,500
Cost of Goods Sold	24,600	22,400
Gross Profit	**17,400**	**16,100**
Operating Expenses	11,500	10,900
Operating Income	**5,900**	**5,200**
Interest Expense	500	550
Taxes	1,620	1,390
Net Income	**3,780**	**3,260**

Data Challenge: Multimodal Customer Experience Insights

As part of the AI project, VELTEX is launching a data initiative to gain deeper insights into customer experience using various data sources. The company wants to go beyond basic automation and truly personalize customer interaction.

The data science team is expected to work with the following data:

- **Tabular data:** Customer profiles, purchase history, loyalty status

- **Text data:** Live chat logs and email transcripts

- **Image data:** Product photos uploaded by customers in reviews

- **Audio:** Voice messages from phone support calls

Objectives: Students must propose a solution that uses these data sources to improve the customer service or marketing function. Each team must:

1. Define a clear goal: e.g., churn prediction, satisfaction classification, recommendation generation, image-based product return verification, or sentiment analysis

2. Identify what kind of model(s) to use: regression, classification, clustering, deep learning, NLP, etc.

3. Suggest Python tools and libraries (e.g., `pandas`, `scikit-learn`, `transformers`, `OpenCV`, `SpeechRecognition`, `pytesseract`, `spaCy`, `Keras`)

4. Justify the data preprocessing steps for structured and unstructured sources

5. Present a strategy for validating and measuring model performance

6. Discuss any limitations or ethical concerns in the use of AI on customer data

Each group must deliver a short presentation and a written brief explaining their approach, visualizations, and results.

Optional bonus: Use AI-generated insights to design a small dashboard mockup showing how managers would use the results.

Discussion Questions

1. What are the key risks and limitations of implementing AI in customer service?

2. How can VELTEX measure the success of the AI project? What KPIs should be prioritized?

3. How should the company manage change and staff retraining to ensure adoption?

4. Discuss possible ethical considerations related to automation in customer-facing roles.