Business Requirements Document (BRD) Template

Executive Summary

The designed application functions as a web interface that utilizes a trained NLP (Natural Language Processing) model to process Tagalog and English feedback by understanding specific local contexts. The interface contains a dashboard which allows users to access and view automatically categorized data from a database done by the NLP model, view instant visualizations, and generate codes (thematic analysis). The system automatically classifies feedback into positive categories, negative or neutral categories both in English and Tagalog for identifying trends. The system delivers improved service evaluation together with increased user engagement by implementing efficient sentiment analysis.

Project Objectives

This section clearly defines the specific, measurable, achievable, relevant, and time-bound (SMART) goals of the project.

- Develop an Automated Sentiment Detection system: supports both English and Tagalog feedback, aiming for at least **70%** classification accuracy, within 9 months of the project initiation.
- The system will include a visualization dashboard feature with filters, reducing the time needed to analyze customer feedback by 7**0%**, within 9 months of project initiation.

Project Scope

This section clearly defines what the project *will* and *will not* include. It sets boundaries and helps manage expectations. Defining the scope prevents scope creep and ensures the project stays focused.

In Scope:

- Create an automated sentiment detection system of user feedback from different services
- Make the system handle multilingual input
- Development of a dashboard for data visualization
- Model selection/development, training and/or validation of the system
- Provide thematic analysis (areas for improvement) based on user feedback.

Out of Scope:

- Data import feature
- Customizable dashboard (future implementation)
- Further fine-tuning of the sentiment analysis model (considered for future implementation)

Business Requirements

This is the core of the BRD. It details the specific needs and expectations of the business from the new solution.

Functional Requirements:

- As a data analyst, I want a system that can automatically generate visualizations of user sentiment trends, so that I can quickly interpret results on user perceptions across all services provided by my department.
- As a data analyst, I want to analyze multilingual input (Tagalog and English) automatically, so that I can efficiently understand and address customer feedback.

- As an event organizer, I want a way to categorize the emotional tone expressed in a text (Microsoft Forms, etc.), so that I can plan my next event much better based on attendee feedback.

Non-Functional Requirements:

- As a user, I want the interface to be user-friendly, requiring minimal training, so that I can use the system efficiently without being overwhelmed by its complexity.
- As a system administrator, I want the system to handle at least 6,000 rows of feedback per event, so that it can support large requests without affecting the system's performance.
- As a user, I want the automated sentiment analysis system to support both English and Tagalog, so that I can quickly interpret the feedback from users in the Philippines.

Data Requirements

- As the head of a research division, I want the data to be stored and retrieved in a structured format through a database, so that the queried data is consistent and analysis will remain efficient and standardized.
- As a quality assurance analyst, I want the system to store the raw user feedback along with the sentiment analysis results (positive, neutral, negative) in the database, so that I can ensure the system-generated sentiment accurately reflects the tone within the user feedback.

Key Stakeholders

This section identifies all individuals, groups, or organizations that have an interest in or can be affected by the project. Clearly defining stakeholders is crucial for communication and managing expectations.

- **Information Resources and Analysis Division (IRAD) - (Primary User):**
  - They will collect user feedback and offer interpretations based on sentiment trends.
- **Project Manager - (Project Lead and Facilitator):**
  - They will guide all teams involved in creating the sentiment analysis system and ensure that the project is completed on time and aligned with the given objectives.
- **IT Department of DOST-STII - (Technical Support):**
  - They will manage and provide the technical infrastructure needed for the project.
- **Developers (QuadThink) - (System Developers):**
  - In charge of developing a sentiment analysis system with a web-based dashboard for visualization, documentation, and training materials for end-users.
- **Legal and Compliance Team - (Compliance Advisors):**
  - They ensure that the project complies with relevant data privacy requirements and laws, handles any legal considerations in terms of data usage.

Project Constraints

This section outlines any limitations or restrictions that may impact the project. These can include budget limitations, timelines, resource availability, technological limitations, or regulatory requirements.

- **Model Training or Fine-tuning Limitations:**
  - The sentiment analysis model may exhibit inaccuracies due to a lack of data training, which can lead to misinterpretations.

- **Scope Expansion:**
  - Stakeholders could ask for more features that are not within the original project scope, which could lead to delays affecting the completion of deliverables on time.

- **Client Availability:**
  - Project progress is subject to the availability of the DOST-STII project manager, developers, and other teams involved.

- **Regulatory:**
  - The system must comply with the data privacy regulations and requirements (Philippine Data Privacy Act) to ensure that all the user feedback data is handled securely and responsibly.

Cost-Benefit Analysis

This section provides an overview of the expected costs associated with the project and the anticipated benefits. It helps justify the investment and demonstrates the potential return.
Cost Analysis description

Costs:

Item	Details	Estimated Cost (PHP)
Web App Development	Developed by QuadThink; includes features like authentication, sentiment analysis, and data visualization.	₱0
Machine Learning Libraries	Utilizes open-source HuggingFace for sentiment analysis models	₱0
Testing and Hosting	Frontend hosted on Vercel (free tier), backend hosting and testing on Render or AWS, and database hosted by the DOST-STII infrastructure.	₱0

Benefits:

Benefit	Explanation
Faster Feedback Processing	The website application will save time by analyzing user feedback automatically instead of manually.

Better Decision-Making	The dashboard will show trends that support data-driven strategies.
Improved Service	Analyzing and understanding user feedback helps improve events and material requests.
Scalability	The website can be improved or reused for similar future projects.
User-Centered Improvements	The website application will allow client teams to adjust services based on real user sentiment.