# **Voice Reports**

## TAGS

1. AI- ML & Traditional Techniques, AI-Generative

# Problem Owner Details

|  |  |  |
| --- | --- | --- |
| Role | Expectations (do not edit) | Mail IDs |
| Problem Owner\* | Who has identified and elaborated the problem | [Gopikrishna\_G@infosys.com](mailto:Gopikrishna_G@infosys.com) |
| Account, if any | If it is relevant to a specific account, please mention | NA |
| Mentors | Technical team who will be able to provide clarifications on the problem, define the score and guide the hackathon participants on the solution approach |  |

# Problem Description

# Description

In today’s data-driven world, reports play a crucial role in decision-making across industries. However, traditional reports are static and require manual interpretation, which can be time-consuming and challenging for individuals with different levels of data literacy.

Voice Reports enhances the way users interact with reports by providing an AI-driven, immersive 360-degree experience. Instead of just reading a report, users can listen to an AI-generated voice interpreting the data, highlighting key insights, and answering queries in real time.

# Business Context (Describe the problem and its impact)

Current reporting systems require users to manually analyze data, which can lead to:

* Information overload: Users may struggle to extract key insights quickly.
* Limited accessibility: Reading reports may not be ideal for people with visual impairments or those multitasking.
* Lack of interactivity: Static reports do not allow users to ask questions and get contextual insights.

How can we develop an AI-powered voice-assisted reporting system that enables users to consume, interact with, and understand their reports in a more engaging and efficient way?

**Problem domain context**

This is intended to be leveraged by all Domains.

Target Audience:

* Business analysts and executives who need quick report insights.
* Individuals with visual impairments.
* Professionals who prefer audio-based learning and interaction.
* Organizations looking to enhance accessibility and engagement with reports.

**Opportunity context**

The emergence of AI-driven voice interactions has significantly transformed how users engage with digital content. With the rise of business intelligence, data analytics and real-time reporting, there is a growing need for more accessible and intuitive ways to interpret complex data.

Key Opportunities:

* Enhanced Accessibility: Voice assisted reporting can make data more accessible for visually impaired individuals and professionals who prefer auditory learning.
* Time Efficiency: AI-powered summaries and voice interactions reduce the time spent manually interpreting reports.
* Improved Decision-Making: Real-time insights through voice can help executives and analysts make quicker, more informed decisions.
* Growing Demand for AI & Automation: Businesses are increasingly investing in AI-driven automation, making this solution highly relevant.
* Multimodal Interaction: Providing both visual and audio engagement can improve user experience, particularly in industries requiring hands-free operation

Participants are challenged to develop a prototype of a Voice Reports system that offers:

* AI-generated voice-over for reports: Automatically interpret and summarize key insights in a natural, conversational manner.
* 360-degree experience: Users can view reports while listening to an AI voice explaining them.
* Voice interaction: Users can ask questions about the report’s metrics and receive AI-driven responses.
* Multi-modal accessibility: Enable both audio-only and visual-audio interaction modes.
* Seamless integration: Ability to work with different report formats (PDF, Excel, dashboards, etc.).

# Key Stakeholders

Please mention who will be the key stakeholders for this problem statement, mention decision-makers, end-users, etc.

# Solution Features

# Deliverables

Participants should develop a working prototype that:

* Generates an AI-powered voice-over for uploaded reports.
* Allows users to ask contextual questions and get AI-driven answers.
* Provides a seamless experience for both visual and audio report consumption.

# Must Have

* AI-generated voice-over that summarizes key insights from reports.
* Ability for users to interact with the report through voice commands.
* Seamless integration with different report formats (PDF, Excel, Document).
* Real-time AI responses to user queries based on report metrics.
* Support for both audio-only and full visual-audio experiences.
* Accessibility features for individuals with visual impairments.

# Good to Have

* Multilingual support for diverse user bases.
* Customizable voice tones and styles for AI narration.
* Seamless integration with different report formats (Dashboards like Power BI, Tableau etc)
* Integration with business intelligence tools (Power BI, Tableau, Google Data Studio, etc.).
* Ability to generate automated insights and recommendations based on data patterns.
* Offline mode for accessing reports without an internet connection.

# Existing Solutions/Products

Please list down all the existing solutions/products closest to this problem (along with references).

# Reference

Please list down reference related to the problem statement and technologies

# Requirement

# Software Required, if any (Mention suggested technologies to be used)

These are suggested technologies only and participants are free to use any Infosys approved technologies.

* Natural Language Processing (NLP): OpenAI, Google Cloud Dialogflow, etc.
* Text-to-Speech (TTS) & Speech-to-Text (STT): Amazon Polly, Google Text-to-Speech, etc.
* Data Processing & Visualization: Python (Pandas, Matplotlib, Seaborn), Power BI, Tableau, etc.
* Backend & Integration: Flask, FastAPI, Node.js, etc.
* Frontend: React, Streamlit, or other UI frameworks.

# Hardware Required, if any (will need to be funded by the account)

Not Applicable.

# How to test (How can the solution be tested and what will be expected in the demo)

The solution can be tested based on the following Criteria:

* Functionality Testing:
  + Verify that the AI-generated voice correctly interprets and summarizes key insights from reports.
  + Check if users can ask contextual questions and receive meaningful responses.
  + Ensure seamless integration with different report formats (PDF, Excel, dashboards etc.).
* User Experience and Accessibility
* Accuracy and Performance
* Scalability and Integration Testing.

Any report format like a PDF or a dashboard can be used as input. Please ensure to test with both textual data reports as well as visual reports like charts.

# Input datasets (Problem Owner needs to share the datasets relevant to the problem)

None. A pre-trained model can be used. Any sample reports can be used.

# Evaluation Criteria (Add other solution specific parameters that will be measured to judge the solution)

|  |  |  |  |
| --- | --- | --- | --- |
| Creativity | How creative or innovative is the idea within the given challenge? Has this been done before, or is this something completely new and original idea (architecture, design and implementation)? | 10% |  |
| Innovative Technology & Quality | How have you utilized the existing technologies to their solution and quality of code? | 20% |  |
| User experience and functionality | Is the overall user experience intuitive? Does the flow make sense? | 10% |  |
| Simplicity | How elegantly does it solve the problem (smart vs harder)? | 10% |  |
| Feasibility/Impact/Reuse/Extensibility/ Modularity | Does your solution work? Can it be implemented at scale? Can it be extended to other similar problem statements? | 30% |  |
| Progress and Execution | How much is accomplished in a day? | 10% |  |
| Demo & Presentation | How well did the team present? | 10% |  |