

EXAMPLE: WEBSITE CHATBOT ASSISTANT

GovAI Use Case: Meeting Assistant

<<example template, responses in green>>

Template Overview

This document serves as a template for others to create their own tailored use cases. It is meant to illustrate a strategic method for using AI technology in solving challenges in state and local governments.

All sections do not need to be completed when first filling this out. Sections can start as considerations (or blanks), and more information can be added in depth as the use case is continued.

Examples can be found in the AI Use Cases Working Group folder.

Proposed Use Case

In a sentence, what is your use case? What is the question you are trying to answer or problem to solve?

Create a chatbot to help users navigate government websites.

Proposed AI

What kind of AI tool is being used and how is it being used? Is it a conversational chatbot or language model? Does the AI use computer vision or audio identification? Is the AI meant for prediction or for studying causal impact?

This AI system is a chatbot that uses natural language processing. The goal is to have users ask the chatbot questions related to government websites and have the chatbot return the answer. This is helpful for users who are unable to navigate the website and also streamlines the process for users – they do not have to search for a long time to find what they need.

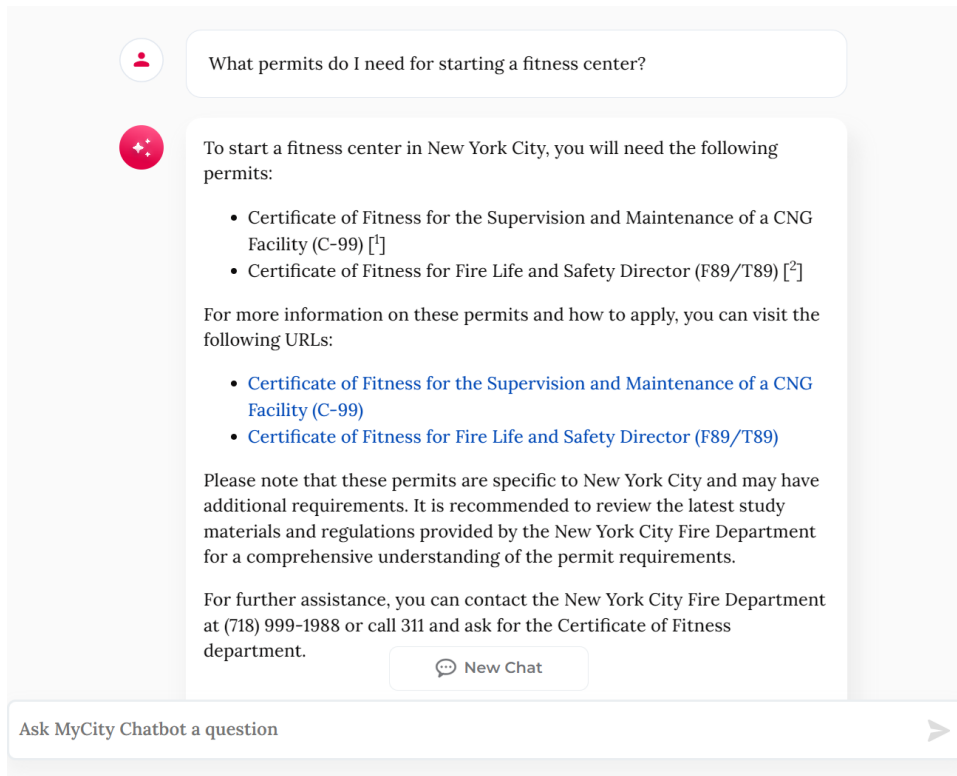


Figure 1: Example image of interacting with an agency chatbot, this one from NYC¹

Proposed Project Phases

Consider what phases your project might have. Can start with your proposed phases, and update as you progress in your use case. Potential phases could include:

1. **Pilot Program Development:** Assess readiness and explore feasibility.

Conduct a pilot program with a chatbot on a public-facing website. Examine if the chatbot helps users reach desired answers faster than users searching for the answers themselves on the website. Assess how reliable the chatbot is for use – does it return the correct answers? Are the links that users are redirected to helpful? How much functionality should the chatbot have – should it summarize webpages or should it only redirect users to links?

2. **Deployment:** Deploy the chatbot into the website and monitor user responses.

Ensure that the residents are finding the correct information with the help of the chatbot.

Potential Benefits

¹ <https://chat.nyc.gov/>

When possible, try to quantify the benefits, like cost savings or added value. Even if we can't assign a number, showing that there are quantifiable benefits can often help.

We anticipate that there will be an average of [# of minutes, hours, etc.] saved by having users interact with a chatbot to find answers. This helps reduce the number of residents who write in or call with their questions, and also helps free up resources to tackle more urgent requests.

Immediate benefits

1. **Reduce cost and time:** The current method for residents who cannot find their desired answer on the website is to call a particular department. Having the chatbot provide more details about the answer or helping residents find answers more quickly reduces the volume of calls to departments.
2. **Identify patterns of need:** Frequent questions to the chatbot can indicate commonly asked questions that should be added to an FAQ or if a general restructuring of the website is needed (having a high volume of questions may be an indication that the website is difficult to navigate).

Wider Applications

1. **Statewide Application:** The chatbot can serve as a model to other municipalities on navigating and answering resident questions.

System and Project Challenges

What kind of challenges do you anticipate in implementation? Can be very general in the planning phase as just considerations. As you implement your use case, add the major hurdles you experienced.

1. How should the chatbot answer questions:
 - a. Does the chatbot answer questions in great detail? Does the chatbot resemble a model more similar to ChatGPT, where the chatbot can ask for clarifications, return detailed lists of procedures, or follow a conversation through several questions?
2. How well does the AI model work:
 - a. Metrics used: How easy residents felt it was to use the chatbot to navigate the website, how satisfied residents were with the answers (based on user feedback), how many calls to departments asking for help were recorded before and after the chatbot was implemented.
3. Privacy concerns:
 - a. No identifying information will be recorded in the database of questions residents ask.

People/Domains to Involve

Who or what groups need to be involved in this project? Where possible, consider when they should be involved as well. Some general groups to consider:

1. Agency or department leadership
 2. People impacted by system (e.g., general public, applicants for a service)
 3. Technical experts, such as the Information Technology Department
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1. Information Technology:
 - a. IT needs to implement the AI model and the additional support, such as integrating the chatbot model onto the website.
 2. Legal:
 - a. Legal professionals are often needed to navigate regulatory and code challenges.

Risks & Mitigation Strategies

1. AI Risk

What would happen if the AI system were inaccurate or makes a wrong decision? How can you mitigate the risk of the system being wrong, and how can you fix the harm done when the system is wrong? For more detail on AI risk considerations, see BDO for an easy-to-understand resource² for an easy-to-understand resource and the EU for original source³.

The AI system is responsible for answering questions about government policy. It is possible that the chatbot may answer questions incorrectly and give residents false information about what they need to do. Mitigating this includes allowing users to interact with chatbots for low-stakes topics, such as when libraries are open, instead of higher-stake topics, such as how to file a building permit. Another method is to always include the phone number of the relevant department or website the chatbot is pulling the information from.

2. Privacy Risk

Consider the risk to data privacy that affects residents. What would happen if the data collected was stolen? How can you mitigate this risk, and what plan is in place if data is compromised?

The chatbot exists to answer resident questions about government services. There should be little to no identifying information in the questions, and so the risk to data privacy is low. However, mitigating this risk includes regularly deleting data after a

² [https://www.bdo.co.uk/en-gb/insights/advisory/risk-and-advisory-services/navigating-the-eu-artificial-intelligence-\(ai\)-act-implications-and-strategies-for-uk-businesses#:~:text=The%20EU%20Commission%20designed%20AI,and%20low%20or%20minimal%20risk.&text=AI%20applications%20would%20be%20regulated,address%20specific%20levels%20of%20risk](https://www.bdo.co.uk/en-gb/insights/advisory/risk-and-advisory-services/navigating-the-eu-artificial-intelligence-(ai)-act-implications-and-strategies-for-uk-businesses#:~:text=The%20EU%20Commission%20designed%20AI,and%20low%20or%20minimal%20risk.&text=AI%20applications%20would%20be%20regulated,address%20specific%20levels%20of%20risk)

³ [https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/698792/EPRS_BRI\(2021\)698792_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/698792/EPRS_BRI(2021)698792_EN.pdf)

certain time frame or redacting identifying information from the questions residents ask.

3. **Other Risk**

What are other kinds of risk your organization has to consider?

Other kinds of risk include risk of new AI guidelines or laws put in place that may necessitate a redesign of the AI system itself due to the training data. Other risk includes the AI system developing a bias that leads to the AI system being unable to identify certain issues, which leads to the ineffective use of AI and inefficient use of resources.

Project Resources Needed

What costs do you anticipate or experience in this use case? Some common cost considerations include:

1. Upfront costs
 - a. The money needed to run a pilot of the chatbot
 - b. Developing the chatbot to answer questions specific to the website and only the website
 - c. Integrating the chatbot into the website
2. Ongoing costs
 - a. Maintaining the chatbot with updated website information and changes in policy
3. Staffing needs, from procuring to managing the system. Where possible, include estimated capacity needed (e.g., number of staff, hours per month for staff)
 - a. Require individuals proficient in implementing chatbots and user design.
 - b. Estimated capacity: 2 staff, each 40hrs a week, total: 320 hrs/month
4. Cost for ending the system or project
 - a. Removing the chatbot from the website
 - b. Storing or deleting the data of resident questions

Data Sources

What kind of data does the AI system(s) need? Is this visual, audio, text, etc.? If possible, please include data classification (e.g., person identifiable, HIPAA, etc.), data quality, and data ownership to keep track of the data and when it needs to be updated.

This AI system uses natural language processing. It takes in text and returns information in text. Most likely this chatbot will not be trained from scratch but will instead be built on top of an existing model that has been additionally trained to answer questions relating to the website.

Public Data. Include the specific dataset if data is from a particular department (more applicable to cities or counties).

1. Name of dataset: San Jose Library Opening Times
 - a. Owner/maintainer: Libraries of San Jose
 - b. How to access: Link to the dataset is found here:
 - c. Details on dataset: This dataset contains the opening hours of libraries.

Private Data

1. Name of dataset: Vendor Training Dataset
 - a. Owner/maintainer: Vendor of AI system
 - b. How to access or collect: Accessible only to the vendor.
 - c. Details on dataset: Contains question and answer pairs.

Combatting AI Bias

What biases did you consider and how are we mitigating them? How can you track if the system is unintentionally impacting different communities differently (e.g., by race, age, gender, skin tone, socioeconomic status, language, immigration status), and how would you go about fixing any unintended bias? See more detail on algorithmic (aka “AI”) bias from the Greenlining Institute⁴, with industry-specific examples starting on page 8⁵. You can also see a brief video on AI bias from PBS⁶.

Biases considered:

1. AI violates definitions of fairness
 - a. The chatbot should give the same answer to the same question regardless of who typed in the question. Additionally, the chatbot should be able to be equally satisfactory at answering questions posed by different groups (separated by race, gender, or age).
2. Model is used in a different context than the one that it was trained in
 - a. The model should be trained on additional data that is specific to the website it is used in – otherwise, the model will be unable to answer questions correctly.

1. Mitigating Bias:
2. Ensure that the chatbot is capable of answering questions across all categories with ease.
3. Ensure the model is being used in the same context as the model was trained in by testing several cases from the use case.
 - a. Test the model on different concerns from a variety of questions to ensure that the chatbot performance is satisfactory.

⁴ <https://greenlining.org/wp-content/uploads/2021/04/Greenlining-Institute-Algorithmic-Bias-Explained-Report-Feb-2021.pdf>

⁵ <https://greenlining.org/wp-content/uploads/2021/04/Greenlining-Institute-Algorithmic-Bias-Explained-Report-Feb-2021.pdf#page=8>

⁶ https://www.youtube.com/watch?v=gV0_raKR2UQ