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Deployment Plan

Goals and Metrics

The recommendations outlined in the Executive Summary are intended to achieve three goals over the span of one year: 1) Increase ticket sales by 3%, 2) Decrease waiting times by 10%, 3) Achieve a 4.6 average rating on TripAdvisor. We acknowledge that it is not possible to draw a causal link with absolute certainty between implementation of this project and these outcomes as there are many factors affecting ticket sales, waiting times, and guest satisfaction. However, the overall goal of the project is to give the Museum of Modern Art a better way to access and analyze visitor feedback, which we have achieved through our models and dashboard. We can survey examine if this is an improvement from the current feedback form available on the MoMa website by 1) interviewing employees who use the model to assess their satisfaction and 2) comparing how often the dashboard is used versus how often the form responses are read.

Compliance and Regulatory Requirements

Although web scraping is legal, it is prohibited by TripAdvisor's Terms of Service, which requires written permission to "access, monitor, reproduce, distribute, transmit, broadcast, display, sell, license, copy or otherwise exploit any Content of the Services." Therefore, in order to continue using TripAdvisor's data, we must seek permission from them. There are several examples of projects similar to this one, such as Invisible Insights for the British Museum that TripAdvisor was willing to share data with, so this should not affect the future viability of this project.

Deployment Requirements

Hardware/Software

We will proceed with on-premise hardware because both the web scraping and data wrangling are not memory intensive. This will simplify implementation and avoid subscription costs associated with cloud services. We will require 5 GB of storage to store the review data and a network connection to access trip advisor. We will use Docker to deploy the dashboard, so it is accessible by all Museum executives.

Personnel

The dashboard will be used by strategy executives at the Museum of Modern Art. It will need to be maintained and improved by a team of IT specialists who will collect feedback from the users, implement updates, and ensure future usability. These IT specialists will

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need to be proficient in Go, R, and Python in order to maintain all the web scraping and analytical functions of the model. They will also be responsible for deploying the dashboard via Docker, which will cost $120/month for five IT personnel.

Change Management

We anticipate this will be the biggest challenge to overcome regarding the project's success. Although our model will provide access and insights to a large amount of user feedback, it is up to museum executives to actually implement changes. Moreover, relying on TripAdvisor completely for the Museum's curation strategy could compromise the artistic integrity of the Museum. It is important to balance the expertise of the Museum's executives with visitor feedback, especially regarding exhibit curation.

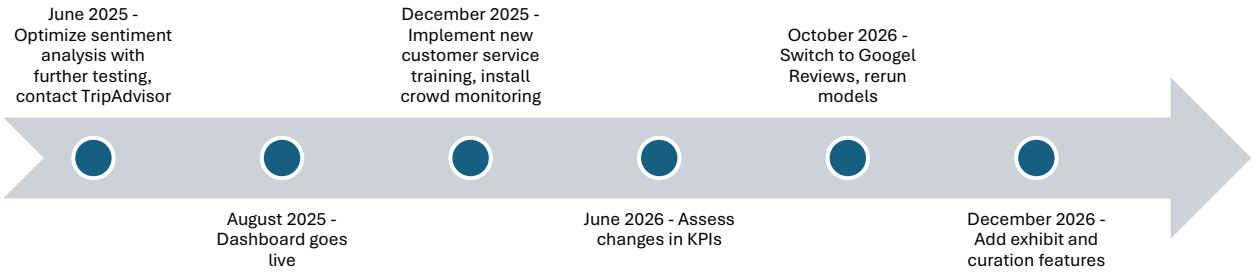
We recommend starting by implementing operational changes which can be objectively measured and can generate short-term wins. By highlighting negative reviews associated with poor staff interactions, long waiting times, and crowdedness we will create a sense of urgency for the Museum's operational challenges. To improve customer service, HR managers will need to remove barriers to understand the challenges staff face by addressing the root causes of poor customer interactions. Moreover, we will need to get buy-in from the Museum Executives to develop a strategic vision for a new ticketing and crowd management system.

Deployment Plan

Testing

To ensure data readiness, we will keep a copy of all scraped TripAdvisor reviews on-premise, which will require less than 5 GB of storage. There is no need for advanced security measures or encryption because all the TripAdvisor data is publicly available. Much of our analysis relies on sentiment analysis, which needs more testing to improve accuracy. For example, sometimes the sentiment analysis will incorrectly classify reviews as negative when they express surprise or it will misinterpret sarcasm. We can create a smaller sample of the dataset which we manually classify this and use it to check the accuracy of various sentiment classification algorithms to optimize the model.

Timeline



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Post-Deployment

One of the limitations of our dashboard is TripAdvisor as a source of data. The platform peaked in popularity in 2018, so it is likely we will get less user-generated content in the future. In the future, we will shift our data source to Google Reviews to access more data on a growing platform.

The model will need to be rerun quarterly to scrape new reviews and track changes in customer satisfaction. Assuming the model is maintained, this can be completed in less than one hour. As the dashboard gains users, we will receive feedback to add features and analytical tools, which the IT team can use to update the model.