TRAFFICFLOW PRO

Spec Status: Final draft
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I want to move forward to build this product with a cross-functional team in the Co.Lab Program
-Yes

Executive Summary

TrafficFlow Pro is a new and smart way to deal with the growing problems people in cities face because of more and more traffic jams and old-fashioned traffic systems. As cities get bigger, people have to spend more time every day traveling to and from work, resulting to a heightened feeling of frustration. TrafficFlow Pro is here to help make city life better by modifying or fixing these issues.

Problem Statement

Urban residents have been experiencing increasing traffic jams and outdated traffic systems that make their daily commutes longer, increasing pollution and causing them a lot of frustration.

Problem to address

Many urban commuters face a significant challenge due to the widespread issue of traffic congestion and outdated traffic systems. The existing traffic infrastructure frequently leads to prolonged commute times, heightened pollution levels, and a persistent sense of frustration among city residents. Despite efforts to improve urban mobility, the current systems often fall short, resulting in inefficiencies that impact the overall well-being and satisfaction of commuters.

8 users were interviewed who attested to the fact that they have been frustrated by traffic while commuting in their cities.

When asked if they got frustrated by traffic, the responses were
- "Yes a lot"
- "Of course"
- "Obviously"
- "It depends on whether or not I am in a hurry"

Furthermore, 12 surevey users, when ask if they have ever experienced frustration due to traffic, gave a unanimous 'yes'. Apart from these personal findings, Global Traffic Scorecard, (2023) emphasizes the negative externalities that arise as a result of traffic, such effects include reducing the quality of life around the world.

Although residents in other traffic dense areas might require this solution, our primary focus is on Urban residents only, and mainly for people who commute with cars. The age range of our target consumer is between 18-60. This age range was chosen based on the age range that drivers usually fall under, however TrafficFlow Pro will still be available to whoever needs it.

Current Solution

Based on the responses from the interviewees and the survey respondents, they currently use navigation apps to get through their daily commute, but these navigation apps are not very effective, and they will opt into a solution that is more efficient. Here are some adhoc strategies that commuters have deployed,

Ad-Hoc Strategies

Enduring Prolonged Commute Times
Challenge: Commuters frequently face extended commute times due to inefficient traffic systems.
Consequence: Frustration builds up, impacting the mental well-being of commuters and their overall satisfaction with urban living.

Environmental Impact of Traffic Congestion
Challenge: Traffic congestion contributes to heightened pollution levels.

Consequence: The environmental impact is substantial, affecting air quality and sustainability in urban areas.

Existing Advances
While there have been advancements in urban mobility solutions, including smart city initiatives and technological innovations, the market has witnessed a saturation of approaches that often overlap without effectively addressing the core frustrations faced by commuters. Some advancements, such as traffic management apps or navigation tools, offer partial solutions but fall short of comprehensively optimizing traffic flow.

Unmet Need

The frustration problem persists due to the absence of a widely-recognized solution that holistically addresses traffic congestion, reduces commute times, and enhances the overall urban commuting experience. Current approaches may focus on isolated aspects of the problem, leaving commuters with incomplete or suboptimal solutions.

In response to this unmet need, TrafficFlow Pro is positioned as a transformative solution designed to tackle the core challenges of traffic congestion and outdated traffic systems. By implementing intelligent traffic management strategies, the product aims to provide a comprehensive and user-centric solution, optimizing traffic flow, reducing pollution, and minimizing frustration for urban commuters of all demographics.

Why must this be addressed?

Addressing the challenges of urban commuting is imperative for ensuring an equitable, efficient, and stress-free experience for all residents. The need to mitigate frustrations related to traffic congestion and outdated traffic systems is grounded in the fundamental principles of providing equal opportunity and access to essential resources and community connections.

Equitable Access and Comfort
Every urban resident deserves the opportunity to navigate their city comfortably and efficiently. The goal is to eliminate additional fatigue and prevent harm caused by inefficient traffic systems. While not every commuter's experience may result in extreme frustration, the fact that inaccessibly designed traffic systems can lead to significant distress, including prolonged commute times and heightened pollution exposure, is unacceptable.

Health and Safety Considerations
In extreme cases, inefficient traffic systems can have severe consequences, similar to inaccessibly designed websites. While it may not be the average commuter's

experience, the potential impact on health and safety cannot be ignored. The goal is to prevent situations where commuters are adversely affected, ensuring that the urban commuting experience is safe, comfortable, and without harm.

Proposed Solution

Although this is still a work in progress, TrafficFlow Pro aims to address the frustration of urban commuters by optimizing traffic flow through intelligent traffic management strategies. The solution involves dynamically adapting to changing traffic patterns, leveraging real-time data for informed decisions, and prioritizing user-centric design to enhance overall satisfaction and create a positive urban commuting experience. It will be launched as an app and a feature that can be infused into other navigation apps to enhance the user experience.

User Stories

User Story #1: As a Commuter, I want to plan my daily route efficiently, so that I can minimize travel time and avoid traffic congestion.

Scenario #1: Plan Daily Route
Acceptance Criteria:
- User can input starting and ending points for daily commute.
- System provides multiple route options based on real-time traffic data.
- User can select and save preferred routes.
- System updates routes dynamically based on current traffic conditions.

User Story #2: As a Commuter, I want real-time traffic alerts, so that I can make informed decisions and avoid unexpected delays.

Scenario #2: Receive Real-time Traffic Alerts
Acceptance Criteria:
- User receives push notifications for traffic incidents along planned routes.
- System provides alternative routes in case of disruptions.
- Alerts include information on the nature and severity of traffic incidents.
- User can customize alert preferences.

User Story #3: As a Commuter, I want to track my commuting history, so that I can analyze patterns and make better-informed decisions.

Scenario #3: Track Commuting History
Acceptance Criteria:
- System records and displays historical commuting data.
- User can view past routes, travel times, and incidents.
- Graphical representation of commuting patterns is available.
- User can export commuting history for further analysis.

Measuring success

<u>Colab's success</u>

Completion of Core User Stories

Definition of Done: User stories related to planning daily routes efficiently and receiving real-time traffic alerts are fully implemented and functional.

Acceptance Criteria: Users can seamlessly plan their daily routes, receive real-time traffic alerts, and experience a significant improvement in their commuting experience.

Demonstrated Value Proposition

Definition of Done: The product successfully showcases its core value proposition, addressing the key pain points of commuters related to traffic congestion and inefficient traffic systems.

Acceptance Criteria: Users express satisfaction with the product's ability to optimize traffic flow, reduce commute times, and provide valuable real-time information.

User-Friendly Interface

Definition of Done: The user interface is intuitive, user-friendly, and aligns with the team's design principles.

Acceptance Criteria: Users find the interface easy to navigate, providing a seamless experience in planning routes, receiving alerts, and exploring commuting history.

<u>TrafficFlow Pro's success</u>

Commute Time Reduction

Metric: Average reduction in commute time for users compared to their previous commuting experiences.

Target: A significant percentage decrease in average commute times, indicating the product's effectiveness in optimizing traffic flow.

User Satisfaction and Feedback

Metric: User satisfaction scores gathered through surveys or feedback forms.

Target: High overall satisfaction scores, indicating that users find value in TrafficFlow Pro and are content with the improvements in their commuting experience.

Usage and Adoption Rates

Metric: Number of active users and frequency of app usage.

Target: Increasing adoption rates and a growing user base, demonstrating the product's popularity and usefulness among commuters.

These metrics will help to know if more route alternative suggestions can truly help to reduce urban commuter's frustration as a result of traffic.

Timeline, Milestones and Activities

Timeline	Milestone	Activities
Week 1	Project kickoff	· Define project goals and objectives. · Identify key features and user stories. · Formulate a project plan and timeline
Week 2	Research and Design	· Conduct user research and gather insights. · Collaborate with designers to create low-fidelity designs for identified user stories. · Validate designs through user testing.
Week 3	Pushing working prototypes for key user stories	· Initiate development based on designs and user stories. · Push working prototypes for user stories, enabling functional testing.
Week 4	Iterative Development and user testing	· Gather user feedback on prototypes. · Implement iterative design updates based on user input.

		· Continuously deploy improvements and updates.
Week 5	Presentation preparation and final iteration	· Prepare for the final project presentation. · Finalize designs and development for core user stories.
Week 6	Final project presentation and reflection	· Present the completed project to stakeholders and team members. · Reflect on the project's success, challenges, and lessons learned.

My roll-out plan
1. Start by releasing parts of the project step by step, focusing on the most important things for users.
2. Keep improving the project regularly using a flexible development approach.
3. Listen to what users say and how happy they are with the changes to decide what to release next.
4. Work closely with the people who are interested in the project to decide on and add more useful features based on what they need.

Extending beyond
1. Think about making the project bigger if users want more and find it helpful.
2. Check if the project can handle more users or work with other Co.Lab projects.

3. Talk with different Co.Lab teams or outside groups to work together and make the project even better.
4. See if the project can be used to solve other big problems or be expanded to cover different areas.

Open questions

1. What specific technologies will be used for real-time traffic data retrieval and processing?
2. How will I divide roles and responsibilities within the team?
3. How will the system handle compatibility with diverse mobile devices and other navigation platforms?
4. What strategies will be employed to promote and encourage user adoption of TrafficFlow Pro?

Appendix

1. 📕 Co.Lab_ Wins Product Spec.pdf
2. 📕 _Co.Lab Team Ebb Spec Draft.pdf
3. 📄 Research Plan: TrafficFlow Pro
4. 📗 Research Analysis- TrafficFlow Pro
5. Ten Highest Traffic Delay Times by City (2022). Retrieved from. *Inrix*. https://inrix.com/scorecard/#city-ranking-list