



LEAN STARTUP METHODOLOGY

GAURANG - ENG21CT0006
JAICE - ENG21CT0011
SHASHANK - ENG21CT0036
SWAROOP - ENG21CT0041

ABOUT IDEA

- Change : Implementing a traffic light optimization system using radar, RFID, or microchips for real-time vehicle data collection at traffic signals.
- Aspect that will change: Replacing the existing traffic light control system that utilizes IR sensors and cameras with a completely new system based on the chosen technology (radar, RFID, or microchips).
- Success or fail metric: Primary metric: No statistically significant reduction in average wait time per vehicle across all traffic signals in the test area compared to the existing system using IR sensors and cameras.

SUCCESS/FAIL SCENARIO

1. Similar Functionality : Existing system likely utilizes IR sensors and AI cameras, achieving similar goals
2. No need for cost reduction : To manage traffic in cities like Bengaluru, efficiency matters more than cost
3. Compatibility Issues : Integrating a completely new system with existing traffic light infrastructure could be complex and time-consuming
4. TCR Priority : The TCR's focus might be on maintaining this progress and addressing safety concerns.

JOURNEY

1. Initial Focus: Accident Data Analysis (Karnataka State Police Hackathon)
2. Pivoting to Traffic Optimization Solutions (Manthan Business Idea Hackathon)
3. Refining Ideas through User Interaction
 - Network engineers
 - Madiwala Traffic Police Station
 - Main Traffic Control Room (Meeting with Dr. Anilkumar)
4. Plan to rephrase the idea

EXPERT ADVICE 1

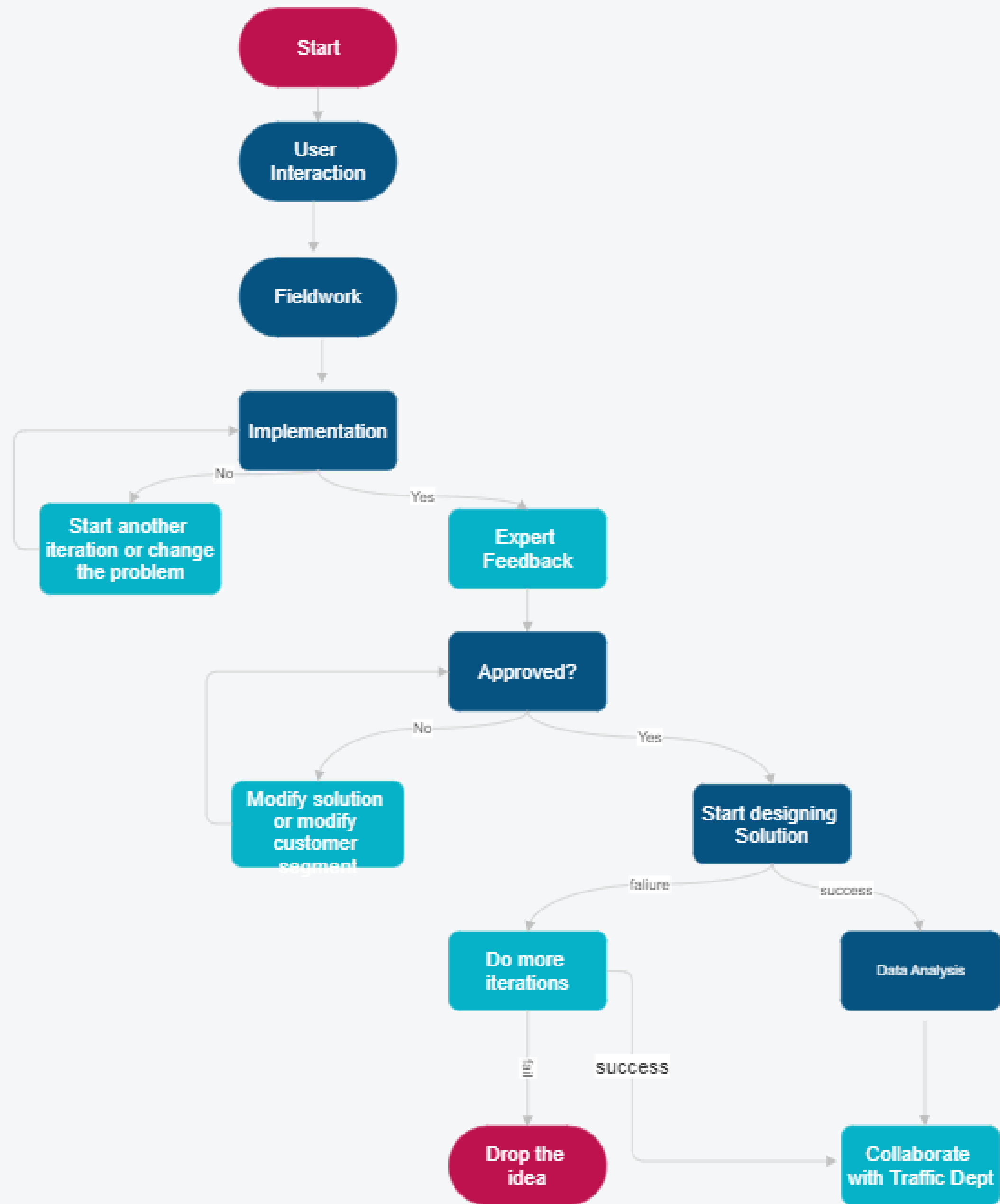
- Date and Time: 22nd March 2024, 12:27
- Location : DSU Campus, Kudlu Gate
- Name : Yogish M P
- Occupation : System Administrator
- Perception on idea:
 - a. Try to work on drawbacks of current system
 - b. Consider preliminary precautions
- Alterations:
 - c. Work on packet management
- Key Findings:
 - d. RFID Chips
 - e. NS3

EXPERT ADVICE 2

- Date and Time: 25th March 2024, 01:50
- Location : Traffic Control Room, Bengaluru
- Name : Dr. Anilkumar
- Occupation : Traffic Police Inspector
- Perception on idea:
 - a. Work on road safety rather than optimization
 - b. Consider preliminary precautions
- Alterations:
 - c. Work on road safety
- Key Findings:
 - d. Current system using IR sensors and AI cameras
 - e. ASTRAM

KEY LEARNINGS

- Acknowledge the importance of adapting based on user feedback
- Emphasize the value of user interaction for refining solutions (e.g., insights from engineers and traffic control room).
- Guidance of Prof. Bhaskar Venugopalan sir in decision making and understanding technical things etc.
- Existing Traffic Management System



BUSINESS MODEL CANVA 1

KEY PARTNERS/CUSTOMERS:	KEY ACTIVITIES:	VALUE PROPOSITIONS:	CUSTOMER RELATIONSHIPS:	CUSTOMER SEGMENTS:
Bangalore traffic police BBMP officials Network providers:	Providing Continuous and live data on the number of Vehicles on a particular road, with high accuracy. Analysis of live traffic data, to mitigate/reduce traffic, by creating a priority system Automate the traffic signalling and management.	Traffic optimization: Improving traffic flow and reducing congestion by adjusting signal timings based on real-time traffic data from the nodes and analyzing the data to provide priority-based signal timings. Automation: Automate the traffic monitoring and traffic signaling system.. Accident prevention and management: Minimalize any accidents that may occur. And provide fast information on accidents occurred in the network Priority vehicles: Ambulances, fire trucks, VIP and police vehicles get immediate priority to pass through the traffic junction	Application based support where the Feedback will be used to reiterations to the product Self-service: The company enables customers to access the network service without any direct interaction with the company.	<ul style="list-style-type: none">● Metropolitan citizens who travel using their private vehicles in cities like BLR● City Traffic police will be able to efficiently manage the traffic in the city with the help of our product
	KEY RESOURCES: Local area network Infrastructure for each traffic junctions in the city. Vehicular ad hoc networks. microcontroller development board such as NodeMCU RFID based technology to act as nodes in the network	CHANNELS: Business to business model. Wherein we will be partnering up with the administrative body of Bangalore metropolitan area (BBMP) and the Bangalore city traffic police.		
COST STRUCTURE: <ul style="list-style-type: none">● Development of network Technology with node chips● Priority system development to automate traffic management● Customer Support			REVENUE STREAMS: <ul style="list-style-type: none">● Subscription Fees● One time payment for the entire product● System maintenance fee	

BUSINESS MODEL CANVA 2

KEY PARTNERS/CUSTOMERS: BMTC:	KEY ACTIVITIES: Connecting the fleet of buses to the LAN at the bus stands and then transmit live data from the bus to the network, from which the data will be provided to a database and that data can be Provided to the customers waiting in the bus stand	VALUE PROPOSITIONS: Traffic optimization: many a times the customer doesn't know if there is a bus that will come to their particular stand that will go to the customer's desired destination, and whether there is space for the customer to board the bus. So if the fleet of buses is connected to a network, which is provided in the junctions then we can send data to the mobile application to the customers. Then they will be able to get information on the number of passengers on board of a bmtc bus. They will also get to know which bus is on route to their bus stand. By this data our customers can make an informed decision on which bus they should board or not.	CUSTOMER RELATIONSHIPS: Self-service: The company enables customers to access the service with the help of mobile applications.	CUSTOMER SEGMENTS: • Metropolitan citizens who travel using the services provided by public transport co-operations like BMTC
	KEY RESOURCES: Local area network Infrastructure for each Bus stand in the city. Ticket management system in each fleet buses so that we can provide microcontroller development board such as NodeMCU database management system which will have cache data		CHANNELS: (B2b)Business to business channel of having tie up with the administrative body of BMTC	
COST STRUCTURE: • Development of network Technology with node chips and database • system to continuously update the information to the customers mobile application			REVENUE STREAMS: • Subscription Fees • System maintenance fee	

BUSINESS MODEL CANVA 3

KEY PARTNERS/CUSTOMERS: BMTC: Since BMTC is providing economical support and concerned with development of Bengaluru, it can be our prominent key partner	KEY ACTIVITIES: Connecting the fleet of buses to the LAN at the bus stands and then transmit live data from the bus to the network, from which the data will be provided to a database and that data can be Provided to the customers waiting in the bus stand	VALUE PROPOSITIONS: Traffic optimization: many a times the customer doesn't know if there is a bus that will come to their particular stand that will go to the customer's desired destination, and whether there is space for the customer to board the bus. So if the fleet of buses is connected to a network, which is provided in the junctions then we can send data to the mobile application to the customers. Then they will be able to get information on the number of passengers on board of a bmtc bus. They will also get to know which bus is on route to their bus stand. By this data our customers can make an informed decision on which bus they should board or not.	CUSTOMER RELATIONSHIPS: Self-service: The company enables customers to access the service with the help of mobile applications.	CUSTOMER SEGMENTS: • Metropolitan citizens who travel using the services provided by public transport co-operations like BMTC
	KEY RESOURCES: Local area network Infrastructure for each Bus stand in the city. Ticket management system in each fleet buses so that we can provide microcontroller development board such as NodeMCU database management system which will have cache data		CHANNELS: (B2C) Business to customer channel by sending the information of the bus and number of passengers onboard the bus	
COST STRUCTURE: • Development of network Technology with node chips and database • system to continuously update the information to the customers mobile application • Customer Support			REVENUE STREAMS: • Subscription Fees • System maintenance fee	

CONCLUSION

Our traffic light optimization project, while unsuccessful in its initial form, yielded valuable insights. We learned the existing system is already effective. Moving forward, we have two options: partner with the Traffic Control Room to focus on road safety using our real-time data expertise, or explore a new area in traffic management, potentially developing a real-time incident detection system or integrating with navigation apps. Regardless of the path chosen, this project has equipped us with valuable knowledge to make a positive impact on Bengaluru's traffic system.