Introduction

Crowd, Chaos & Stampede. These are the three words that summarize the state of the service at a bus depot in Bangalore, India. The interesting part is that even in this confusion the passengers achieve their goal. But at what cost? Can we reduce their stress and help them surf and come out of the chaos?

The goal here is to bring in a **change**. The commuters are used to the congested service and begin (and end their day) with a harsh journey. It is as if they have no other choice. The goal here is to aid the commuters and provide them with information so that they consciously or subconsciously have a safe and a less tiring journey.

The bus depot that is being introduced here is one of the busiest terminals in Bangalore, India. It helps passengers commute to various parts with in the city.

 As a regular user of the bus service, I got an opportunity to have personally interacted with the passengers and observe the way they use service. The rest of the sections in the assignment are the outcome of the observation.

NOTE: A few photos have been attached to this section to compare and contrast the peak and off-peak time. It also shows the type or users and the way they use the service.

How do the buses operate?

In a nutshell, the service provider follows a predefined time table/chart. The chart defines the routes and the frequency of buses within the route. They service starts at 05:00 in the morning and cover various parts of the city until 23:00.

Like any other intra-city bus services, the buses in Bangalore follow the route and make stops at various points to pick passengers.

The story, so far, is fair and square. However, the peak-time traffic, the passenger density and the way the commuters are serviced tells a totally different story.

The points are listed below:

Skipping stops: With the hard charting in place, the drivers tend to skip stops or deviate from the route to save time.

Shoving and pushing: The due to crowding at the stops, the buses find it hard to halt at the allocated space. The passengers have to literally push and make way for themselves to enter the bus or risk waiting for the next bus on the congested road.

Board on the run: With the pressure of reaching the destination on time the buses don't come to a complete halt at the stops enroute. This calls for passengers to jump into the bus while it is moving!

Revenue collection: A bus built to carry 60 people ends up carrying close to 110. Most of the time people just don't take tickets!! Hence a loss of revenew along with a safety issues.

With all this said, the service is not as bad as it seems to be during the peak time. The off-peak time journeys are very comfortable and it takes just one third of the time to reach the destination!!

How do the commuters use the service?

The paragraphs below describe the way the commuters use the service at the main bus depot/terminal.

The main station is divided into platforms. When a new commuter walks in, he will have to query the fellow passengers for the right platform. Once he reaches the platform he will have to patiently wait, in a moderately ventilated space (NOTE: This space is generally cramped during the peak time. Sometime it can get so cramped that buses find it hard to even move.)

The feeling and emotions that they go through at this point is extremely interesting. They wait for a bus with the hope to get a comfortable seat. The hope turns to anxiousness then to impatience then to frustration (The crowd and sultry platform adds to it). What adds to the frustration is the lack of information about when the bus will arrive to the station. They look at each bus entering the depot with the hope that it is bus they are expecting!!

When the bus finally enters the depot most of the passengers scurry and run along with the bus until it comes to a halt (like paparazzi chasing the celebrity). The bus doors are now a major bottle next. The passengers in the bus find it hard to exit as the next batch of commuters is waiting to pounce into the nearest empty seat.

Once the bus is filled to the capacity it leaves the depot to complete the next leg of the journey.

Information systems

The questions that are frequently asked at the depot are: "Does this bus go to so and so place? What time does it leave? When will xyz bus arrive? Can u let me know once we reach a particular stop?"

There are no information systems that answer these questions! The commuters solely depend on the help of fellow frequent commuters. Frequent commuters are the knowledge base and they are very helpful and mostly reliable. However, it takes two to three attempts to find the right person and get the complete information.

That is it! The passage of knowledge is solely dependent on word of mouth!

Brainstorming results

This section categorizes the needs from two different points of view. The daily commuters and the service providers.

Passenger Needs/Goals

As a passenger/commuter needs to reach workplace or home with little or no stress. Over the years I have observed all kinds of passengers using the bus service. The list is goes on and one and here is a short one.

Type of passengers: Senior citizens/adults/students/ the disabled/tech savvy/tech haters/people carrying heavy luggage/people with internet access/people with no internet access and so on.

The brainstorming results, without considering the user type, are as follows:

1. **Planning**: Need for information on the current location and frequency of the bus so that the passenger can plan and reach the station in time. 2.
2. **Bus - Platform information**: Avoid the passengers from wandering in the depot by providing directions to the platform 3.
3. **Alerts**: Provide alerts when the desired bus reaches the station (so that the commuter can wait patiently)
4. **Alternate bus info:** When the current bus is loaded to capacity provide information on the next bus or alternate bus and avoid overcrowding.
5. **Peak and off peak offers:** Encourage the passengers to use the bus during the off peak time or plan appropriately to avoid congestion.
6. **Social hangout:** Find who else in is travelling in passengers' friend network.
7. **Destination Alert:** Alter the passenger when the bus is approaching its destination.
8. **Alert hosts:** end alerts to people who will be receiving the passenger at the destination.
9. **Share and save experience:** Allow the passenger to save the route/plan/and experience information for future use.
10. **May I help you?** Volunteers / Service provider employees at strategic locations to help lost and wandering passengers.
11. **Pre-ticketing service:** Get the ticket beforehand. Instead of fumbling with wallet and coins in a crowded bus.
12. **In bus notification service:** Tourism information and hot spots in the city can be highlighted to the passenger

Service provider needs/goals

13. **Dynamic routing:** Adjust chart based on peak time and off-peak time demand.
14. **Dynamic fares:** Encourage users to use off-peak time service by offering less fare.
15. **Frequent travelers:** Identify frequent travelers and advertise coupons/bus passes to save money over a long time.

Inspiration

1. **"Precise behavior from imprecise knowledge":** I remember reading this quote "Precise behavior from imprecise knowledge" while studying the placement of buttons on keyboards. The bus depot situation here is one good example. Where most of the commuters reach their destination with little or no knowledge of how to do it.
2. **Livemocha.com:** There are two ways one can use the learning material in livemovha.com (portal to learn languages). One is pay to progress OR teach others to gain points (points can be used to learn a different language). The motivations factor employed in the portal is quite inspiring.
3. **Hanging out with friends:** A trip can be long & boring or short & exiting. It all depends on who you are travelling with. The idea here is to help the passenger find and plan their daily commute along with friends in their network.
4. **Alerts:** Instantaneous SMS alerts are a cost effective way of providing instantaneous updated to the user. Be it update on a credit card transaction or any other alert. Mobile penetration is quite deep in India and not using this for providing useful information to the user is a shame.
5. **Bus service in Edinburgh, UK:** The logistics behind the bus service in Edinburgh is awe inspiring. Every bus stop has a display system that augments the static information system to keep the commuter up to date. **As soon as a passenger sees that a particular bus is delayed, they opt for a different route to complete their journey!!**