

UX Case Study

Car Servicing App for Service Advisors

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1. Introduction

Possible Motors is a car manufacturing company and is looking to develop a 'Service Advisor' app which is aimed to improve productivity and visibility of service advisors working with Authorized Service Centres of Possible Motors. 'Service Advisor' app is aimed to replace the paper-based service appointment tracking and monitoring used by service advisors. It will allow the service advisors to take better informed decisions and provide the customers with enhanced service experience. The app will be integrated with scheduling application used by Administrators and will also be interoperable with technician operated app in the future. The 2000+ Authorized Service Centres of Possible Motors together handle servicing of more than 1 million cars per year. The digitization of the process will enable Possible Motors to better learn about the servicing workflow and enable to reduce bottlenecks occurring during service tasks, and providing better experience to its customers - hence targeting to increase business revenue. This initiative is a part of overall digital transformation for creating efficient ecosystem of interconnected systems.

The following business drivers have been identified for this project, with key enablers to achieve the identified benefits:

- Business Continuity
- Improve Productivity
- Improved pre-emptive decisions
- Compliance Improvement
- Better Planning

2. Business Requirements

The high level business requirements are as follows:

- Creation of a mobile app and supporting platform for Service Advisors working with Authorized Service Centres.
- Integration with scheduling application used by Administrators and be interoperable with technician operated app in the future.
- Service Advisors should be able to efficiently track their service appointments using the app.
- Service Advisors should have ability to identify show-stoppers in the expected delivery timeline.
- Service Advisors should have visibility of costs.
- Service Advisors should have ability to view the history and condition of the vehicle easily and suggest appropriate service tasks to the customers.
- Service Advisor should have ability to use the app in major regional languages considering diversity of the country.

3. Current (As-Is) Process

The Current (As-Is) process used by Service Advisors is heavily paper based, for tracking of servicing activities. The process starts with scheduling of service appointment by Administrator.

On the day of service, once the vehicle arrives at service centre (either by pickup & drop or self-drive by customer), a Service Advisor is assigned and informed about the appointment by the administration team. The Service Advisor gathers documents about the vehicle's service history and gathers information from customer about current issues. Based on the protocols defined for various service tasks to be performed at specified intervals and the issues reported by customer, the service advisor recommends the service tasks that can be performed and the associated costs. The customer is given an estimated timeline in which the service will be complete. The service advisor provides information to the technicians about the service tasks to be performed and distributes the responsibilities among technicians. Once the technicians report the completion of service tasks, the service advisor does an inspection and notifies the customer about completion of service.

4. Scope

The Scope of the current project is confined to development of ‘Service Advisor’ app and integrating it with Administrator and Technician operated (future) applications. Administrators of Authorized Service Centres are provided with access to the web application for scheduling of appointments. The project will include integration of this web application with ‘Service Advisor’ app. The current project does not include creation of Technician operated app. In the future, the Technician operated app will be integrated with ‘Service Advisor’ app to further increase efficiency.

5. Competitive Analysis

We performed a Competitive Analysis of two products used by service advisors of two automobile companies.

The results are as follows:

	Product pros			Product cons		
Competitor 1	Easy to use	Appointments journeys are simple and clear	Buttons are clearly marked	App is only available in English	App sections are not defined by color	Minimal brand identity
Competitor 2	Visually appealing	Available in five languages	Clear brand identity, including colors, font, style, motion, imagery and photography	Unreliable appointment tracker	Process is repetitive and frustrating	Some elements seem clickable but are not

6. Foundational Research Plan

We created a Research Plan for creating a foundation of understanding of the targeted user (service advisor) and Empathizing with the user during this process.

We plotted the Background Knowledge based on the information we had received from various stakeholders of the projects such as Business Analysts, etc. Based on the information we received, business requirements and our internal study, we decided on the Research Goals targeted in this research. We further plotted the Research Questions and Sub-questions we were expecting to be answered in the research. We decided the criteria for the Participants and recruitment process to be part of the research. We had a Budget and Timeline in which the research had to be conduct. The Mode of Research was Interview sessions with the participants.

The details are shown on next screen.

Foundational Research Plan

1 Background knowledge

- 'Service Advisor' app will be a replacement for the current paper based process used by service advisors of Authorized Service Centres.
- The app will be part of the larger ecosystem of interconnected applications in development.
- The app will be used by service advisors to improve their efficiency in tracking, monitoring and visibility of assigned service appointments.

2 Research goals

- Empathizing with the users - service advisors
- Understand the advantages and disadvantages of existing paper based process used by service advisors
- Understand the pain points and bottlenecks in the existing process

3 Research questions

- What information is critical for the service advisors?
- What is the service advisor keen to know about a service appointment at any stage?
- What problems do service advisors face during the day?
- What is the age group of service advisors?
- Is there a relation between service advisor's educational qualifications and his ability to handle multiple service appointments?
- How strong is the relation between service advisor's experience and his ability to handle multiple service appointments?

4 Participants

- The participants in this research will be 4-5 service advisors of varied educational background and experience from an authorized service centre in a metro city.
- The same criteria of participants will be used for authorized service centre in rural place.

5 Recruitment process

- We will interview the service advisors from a metro city and a rural place.

6 Budget and timeline

- Our budget will be between Rs. 10,000 - 20,000
- Our research timeline will be between April & May

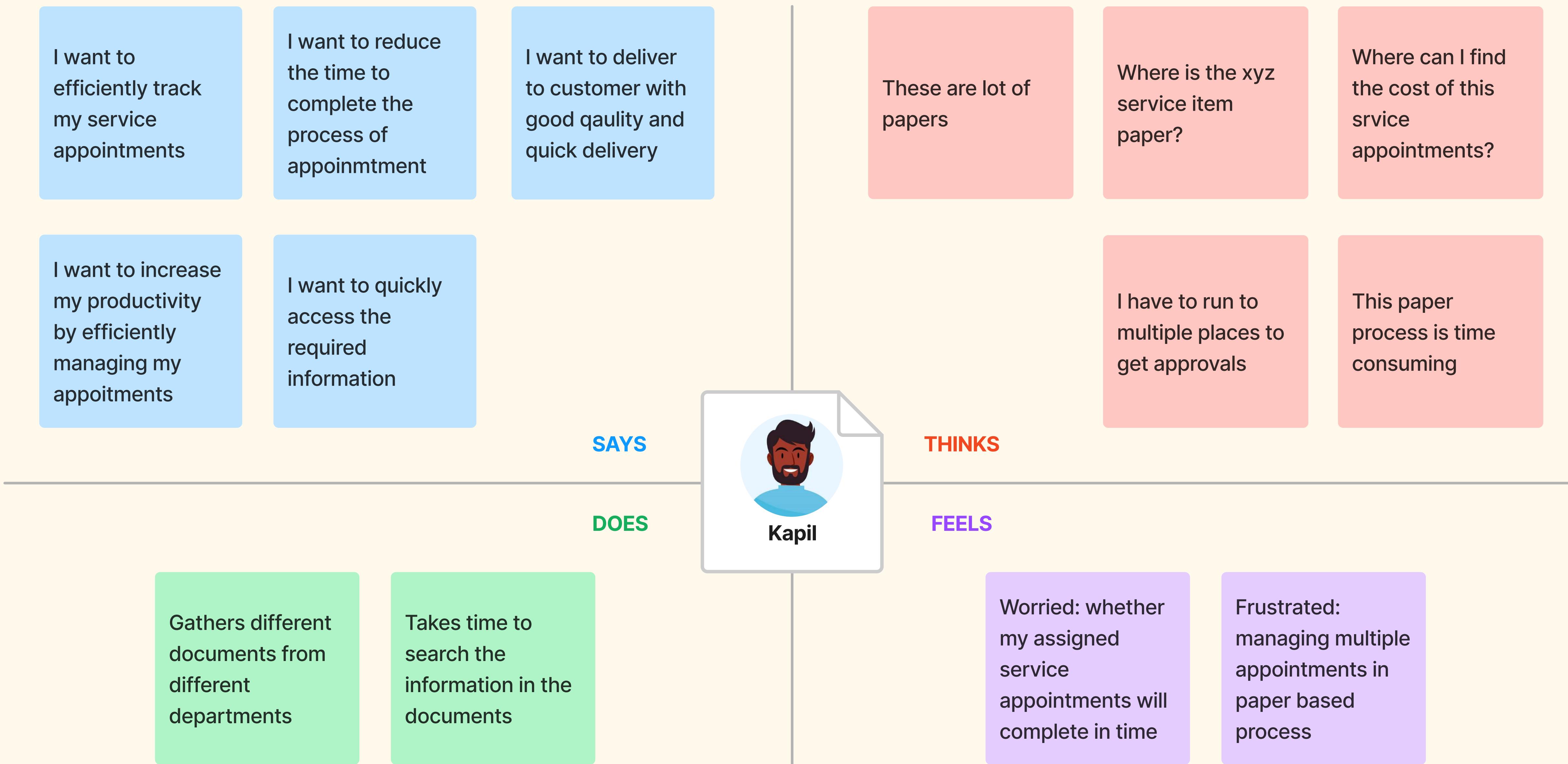
7 Mode of Research

- In-person interview sessions with the selected participants.
- The expected duration of session with each participant is expected to be one hour.

8 Results

- The observations from the interview sessions with participants are translated to Empathy Map, Persona and User Task Flow

7. Empathy Map



8. Persona

Kapil Patil



AGE	28
EDUCATION	B.Com.
STATUS	Married
OCCUPATION	Service Advisor at Shreeja Francise of Possible Motors
LOCATION	Pune

“ I want to efficiently track and complete my assigned service appointments ”

Goals

- Complete view of my service appointments
- Quick access to required information
- Improve my productivity

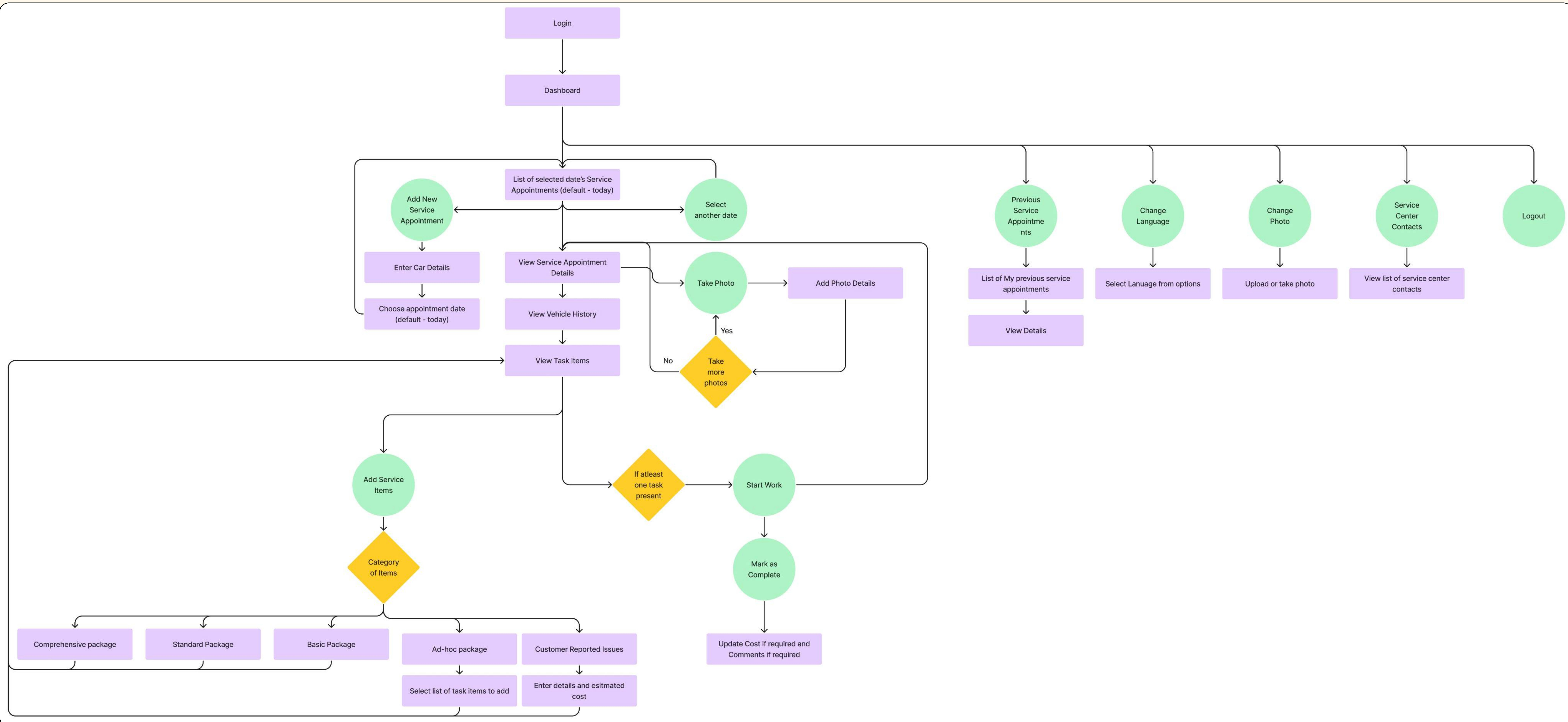
Frustrations

- Handling large bunch of papers and their hassles
- It takes time to find required information
- End-to-end process is tedious and time consuming

Brief story

Kapil has a bachelor degree in commerce and is from an economic middle-class background. He wishes to own a house and provide quality education to his children. Also he wishes to provide good medical care to his parents. In his free time, Kapil likes to follow Marvel movies and stock investing

9. User Task Flow



9. User Task Flow (cont...)

- As we know, the Users in current case are Service Advisors of Authorized Service Centres.
- The user flow starts with the Login screen - the login credentials for the users (Service Advisors) would be created by Administrator(s) of the Authorized Service Centres. The Service Advisors would be provided with the credentials by the administrator(s). Also note that the app is intended to be used only by employees of Authorized Service Centres.
- After logging in, the Dashboard screen would be shown - here the user will be able to see his today's list of assigned Service Appointments (most of the Service Appointments would be created and assigned by Administrators using the scheduling application. Additionally, Service Advisors would also be able to create new service appointments as explained later). By default, today's date would be selected to display the list of service appointments. The user can change the date to see the appointments falling under other dates. Each item in the list would show important and required information upfront.
- On click of an item, the respective appointment's view would be open. This view would show categorised information of Vehicle Details, History and Service Items. User would be able to add photos of the vehicle as required. User would be able to see all details and history (service history, insurance claims, etc.). User can add Service Items needed for the current service.

9. User Task Flow (cont...)

- The service items would be bundled into pre-defined categories to allow quick addition of all relevant items. Further, user can add Ad-hoc items (individual items) as required. User can also take note of Customer Reported Issues in this stage.
- Once there are service items added to the appointment, the user can Start the Work. This would assign the service items to various available technicians. User would be able to see status of each service item. More Service Items can be added at any point of the appointment till it is Complete. The Customer (car owner) would be notified of any addition to service items and cost changes.
- Once all service items are complete, the user can mark the appointment as Complete. At this point, the user can update the total cost incurred and add comments. Also note that the user can click various photos during lifetime of the appointment. The Customer would be notified of the completion of the service.
- The user can also add new service appointments from the Dashboard. User can search for vehicle details by vehicle number and the details would be auto-populated. He can then select the date and time for the appointment.
- From the Dashboard hamburger menu, the user would be able to view his previous service appointments, change language of the app (important considering diversity and service network of the business), change his photo, view the service center contacts and logout.

10. Design first mocks

We designed the first mocks in the low level of fidelity. The mock-ups should help align all stakeholders on what we learned from research and a direction for our design. It was important for us to demonstrate concepts in the workflow to be clearly communicated.

The mocks are displayed on next screen with the link to view them in the browser.

First set of low fidelity wireframes

Link

The wireframes illustrate the following screens:

- Login Screen:** Shows fields for User Id and Password, a LOGIN button, and a note about authorized partners.
- Service History Screen:** Displays a list of service items with dates, costs, and ratings.
- Vehicle Details Screen:** Shows vehicle model, color, owner, and contact information.
- Photo Capture Screen:** A dark screen for capturing a photo or video, with a note to tap for photo or hold for video.
- Service Item Selection Screen:** Lists categories like Comprehensive, Standard, Basic, Ad-hoc, and Customer Reported Issues.
- Service Completion Confirmation Screen:** A modal asking if the service is complete, with fields for cost and comments, and a CONFIRM button.
- New Service Appointment Screen:** Fields for vehicle number, date, time, and drop type (Pickup & Drop or Self drive).
- Service Center Details Screen:** Shows previous appointments, language change, photo change, service center contacts, and logout options.

11. Usability Test

Planing the study

① Research Goals

- Determine if users can complete core tasks within the prototype of the construction field worker app and understand specific difficulties users encounter when they try to complete the core tasks.

② Research Questions

- How long does it take for the user to find relevant information for an assigned service appointment?
- Is the user able to add photos and service items to an appointment?
- What can we learn from the user flow where users get stuck?
- What additional features would the users like to see?
- Do users think the app is easy or difficult to use?

③ Key Performance Indicators (KPIs)

- Time on task: how much time users spend on adding details and starting a service appointment .
- User error rates: how often users get stuck in the the appointment lifecycle.
- System Usability Scale: a follow-up questionnaire to evaluate participants feedback.

④ Methodology

- Unmoderated Usability Study
- Each session will last 20 to 30 minutes, based on a list of prompts, followed with SUS after the study

⑤ Budget and timeline

- Our budget will be between Rs. 10,000 - 20,000
- Our research timeline will be between May & June

⑥ Participants

- The participants in this research will be 4-5 service advisors for both metro and rural centres
- 2-3 service advisors from previous study (foundational research) will be retained and further remaining participants will be recruited based on similar criteria used in foundational research.

⑦ Script

- Prompt 1: You will be presented with a list of service appointments assigned to you with today selected by default. Review the information displayed in the list.
- Prompt 2: Review the details of the opened service appointment. Are you able to see all relevant details required for you to do the work and add photos?
- Prompt 3: Try to add Service Items to an appointment. Are you able to add required Service Items to the appointment efficiently?
- Prompt 4: Add a new service appointment. Are you able to easily to add a new service appointment?

Have the participant complete the System Usability Scale. Participants are asked to score the following items with one of five responses that range from Strongly Agree to Strongly disagree:

- I think the app is easy to use.
- I find the app easy to navigate.
- I feel confident using the app.
- I imagine that most people would learn to use this app quickly.
- The main user flow is clear.
- I find the app is unnecessarily complex.
- I need the support of a technical person to be able to use this app.
- I need to learn a lot of things before I can start using this app.
- I find the various functions in this feature to be well integrated.
- I found the app very cumbersome to use

11. Usability Test

Observations

Participant's Name: Kapil Patil				
Task	Click Path	Observations	Quotes	Task Completion
Write the task number and directions here.	Record what path the participant took to complete the task.	Note down behaviors, opinions, and attitudes along with any errors, issues, or areas of confusion.	Note any significant quotes (positive and negative).	Choose if the task was: 1 - easy to complete 2 - completed but with difficulty 3 - not completed
Prompt 1: You will be presented with a list of service appointments assigned to you with today selected by default. Review the information displayed in the list.	Open App > Login > Home screen	Participant wants to see few additional details with each service appointment in the list	I also would like to see Estimated Cost, number of items completed and Estimated time of completion for each appointment	1
Prompt 2: Review the details of the opened service appointment. Are you able to see all relevant details required for you to do the work and add photos?	Home screen > click on service appointment from the list	Participant is contented to see all the fields	N/A	1
Prompt 3: Try to add Service Items to an appointment. Are you able to add required Service Items to the appointment efficiently?	Service appointment > Tasks	Participant is contented to see pre-defined categories of service items	N/A	1
Prompt 4: Add a new service appointment. Are you able to easily to add a new service appointment?	Home screen	Participant is contented to be able to add new service appointment quickly	N/A	1
Participant's Name: Manish Goel				
Task	Click Path	Observations	Quotes	Task Completion
Write the task number and directions here.	Record what path the participant took to complete the task.	Note down behaviors, opinions, and attitudes along with any errors, issues, or areas of confusion.	Note any significant quotes (positive and negative).	Choose if the task was: 1 - easy to complete 2 - completed but with difficulty 3 - not completed
Prompt 1: You will be presented with a list of service appointments assigned to you with today selected by default. Review the information displayed in the list.	Open App > Login > Home screen	Participant is satisfied to view list of service appointments. Excited to see vehicle image and number upfront in the list	Happy to see images of vehicles and vehicle number highlighted	1
Prompt 2: Review the details of the opened service appointment. Are you able to see all relevant details required for you to do the work and add photos?	Home screen > click on service appointment from the list	Participant wants to add comments with each photo taken	I want to add Comments for each photo taken	1
Prompt 3: Try to add Service Items to an appointment. Are you able to add required Service Items to the appointment efficiently?	Service appointment > Tasks	Participant is contented to see pre-defined categories of service items	N/A	1
Prompt 4: Add a new service appointment. Are you able to easily to add a new service appointment?	Home screen	Participant is contented to be able to add new service appointment quickly	N/A	1
Participant's Name: Heer Prabhakar				
Task	Click Path	Observations	Quotes	Task Completion
Write the task number and directions here.	Record what path the participant took to complete the task.	Note down behaviors, opinions, and attitudes along with any errors, issues, or areas of confusion.	Note any significant quotes (positive and negative).	Choose if the task was: 1 - easy to complete 2 - completed but with difficulty 3 - not completed
Prompt 1: You will be presented with a list of service appointments assigned to you with today selected by default. Review the information displayed in the list.	Open App > Login > Home screen	Participant is satisfied to view list of service appointments	N/A	1
Prompt 2: Review the details of the opened service appointment. Are you able to see all relevant details required for you to do the work and add photos?	Home screen > click on service appointment from the list	Participant wants to add comments with each photo taken	N/A	1
Prompt 3: Try to add Service Items to an appointment. Are you able to add required Service Items to the appointment efficiently?	Service appointment > Tasks	Participant wants to see technician name and status for each service item	N/A	1
Prompt 4: Add a new service appointment. Are you able to easily to add a new service appointment?	Home screen	Participant is excited to be able to add new service appointment quickly	Excellent that I can quickly add new service appointment by selecting just vehicle number and appointment date	1
Participant's Name: Amogh Kurinji				
Task	Click Path	Observations	Quotes	Task Completion
Write the task number and directions here.	Record what path the participant took to complete the task.	Note down behaviors, opinions, and attitudes along with any errors, issues, or areas of confusion.	Note any significant quotes (positive and negative).	Choose if the task was: 1 - easy to complete 2 - completed but with difficulty 3 - not completed
Prompt 1: You will be presented with a list of service appointments assigned to you with today selected by default. Review the information displayed in the list.	Open App > Login > Home screen	Participant is satisfied to view list of service appointments	N/A	1
Prompt 2: Review the details of the opened service appointment. Are you able to see all relevant details required for you to do the work and add photos?	Home screen > click on service appointment from the list	Participant is happy to see all the fields	N/A	1
Prompt 3: Try to add Service Items to an appointment. Are you able to add required Service Items to the appointment efficiently?	Service appointment > Tasks	Participant is contented to see pre-defined categories of service items	Very nice to see standard packages can be added directly	1
Prompt 4: Add a new service appointment. Are you able to easily to add a new service appointment?	Home screen	Participant is contented to be able to add new service appointment quickly	N/A	1
Participant's Name: Sneha Surve				
Task	Click Path	Observations	Quotes	Task Completion
Write the task number and directions here.	Record what path the participant took to complete the task.	Note down behaviors, opinions, and attitudes along with any errors, issues, or areas of confusion.	Note any significant quotes (positive and negative).	Choose if the task was: 1 - easy to complete 2 - completed but with difficulty 3 - not completed
Prompt 1: You will be presented with a list of service appointments assigned to you with today selected by default. Review the information displayed in the list.	Open App > Login > Home screen	Participant is satisfied to view list of service appointments	N/A	1
Prompt 2: Review the details of the opened service appointment. Are you able to see all relevant details required for you to do the work and add photos?	Home screen > click on service appointment from the list	Participant is happy to see all the fields in categorized manner	Happy to see categorized information	1
Prompt 3: Try to add Service Items to an appointment. Are you able to add required Service Items to the appointment efficiently?	Service appointment > Tasks	Participant wants to see technician name and status for each service item	I would like to see Technician and Status for each service item	1
Prompt 4: Add a new service appointment. Are you able to easily to add a new service appointment?	Home screen	Participant is contented to be able to add new service appointment quickly	N/A	1

11. Usability Test

Affinity Diagram

Get a summary of all my service appointments

I also would like to see Estimated Cost, number of items completed and Estimated time of completion for each appointment

Happy to see images of vehicles and vehicle number highlighted

Participant is satisfied to view list of service appointments

Getting information about a service appointment

I want to add Comments for each photo taken

Participant is happy to see all the fields in categorized manner

Participant is contented to see all the fields

Adding Service Items to an appointment

I would like to see Technician and Status for each service item

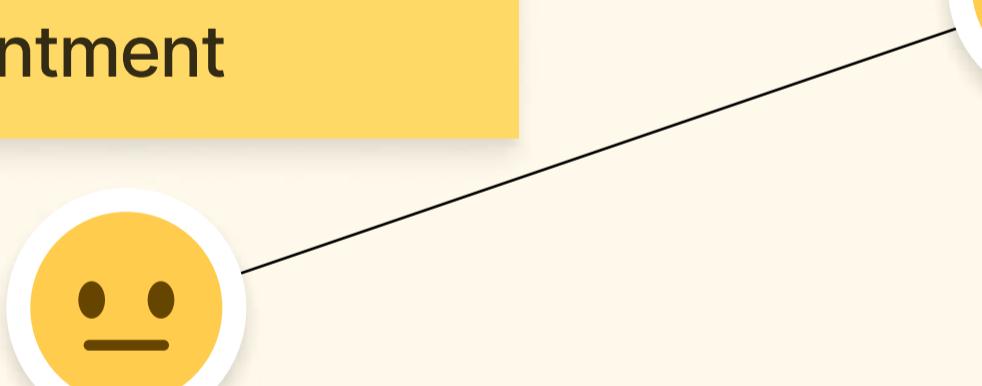
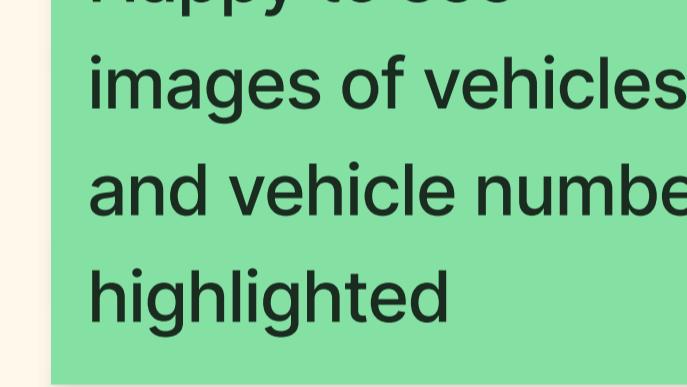
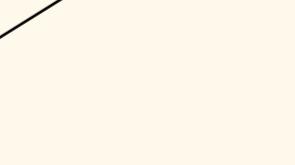
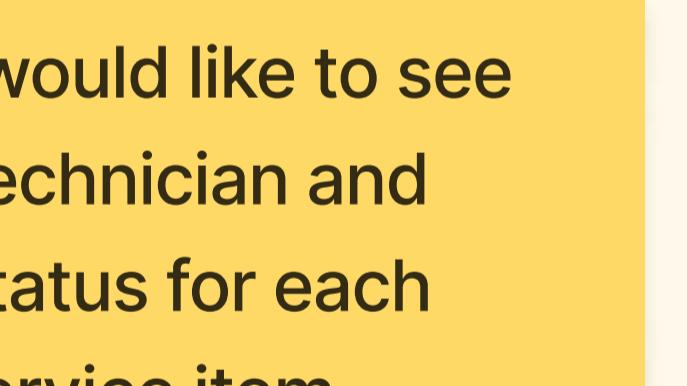
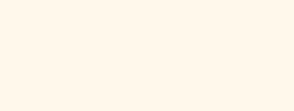
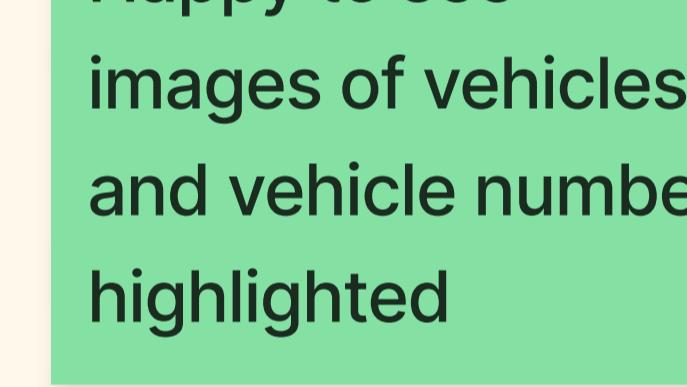
Participant is contented to see pre-defined categories of service items

Adding a New Service Appointment

Excellent that I can quickly add new service appointment by selecting just vehicle number and appointment date

Participant is contented to be able to add new service appointment quickly

12. Journey Map

 <p>PERSONA Kapil Patil (Service Advisor)</p> <p>SCENARIO Touch base on all important functionalities</p> <p>USER GOALS & EXPECTATIONS</p> <ul style="list-style-type: none"> • Complete view of my service appointments • Quick access to required information • Improve my productivity 				
Journey Phases	Get a summary of all my service appointments	Getting information about a service appointment	Adding Service Items to an appointment	Adding a New Service Appointment
Actions	<ul style="list-style-type: none"> • View today's all service appointments for me • View details of each appointment upfront 	<ul style="list-style-type: none"> • Viewing Details of vehicle and History • Adding photos of the vehicle 	<ul style="list-style-type: none"> • Selecting from pre-defined packages • Adding Ad-hoc items • Adding Customer reported issues 	<ul style="list-style-type: none"> • Get vehicle details by vehicle number • Set appointment date
Mindsets and Emotions	<p>I also would like to see Estimated Cost, number of items completed and Estimated time of completion for each appointment</p>   <p>Happy to see images of vehicles and vehicle number highlighted</p>   <p>I want to add Comments for each photo taken</p>   <p>Happy to see categorized information</p>   <p>I would like to see Technician and Status for each service item</p>   <p>Very nice to see standard packages can be added directly</p> 	  <p>Excellent that I can quickly add new service appointment by selecting just vehicle number and appointment date</p>		
Observations and Insights	<ul style="list-style-type: none"> • On each service appointment: add Estimated Cost, number of items completed (for in-progress) and Estimated Time of Completion 	<ul style="list-style-type: none"> • Enable user to add Comments on taking photo • Display Comments under the photo in Details tab 	<ul style="list-style-type: none"> • Once service items are added, each item card can have Technician detail and Status 	<ul style="list-style-type: none"> • Nothing to be changed here, yet!

13. Iterated set of wireframes

Link

The wireframes illustrate the evolution of a mobile application for vehicle service management, specifically focusing on service advisor (SA) and technician (E) roles.

Row 1: Service Advisor (SA) Screens

- SA-012 MH12 HS 3456 Details:** Displays vehicle details (Nexxon XM(P), Magenta Red, Owner: Amruta Shankhe, Contact: +91 8435612345). Includes a calendar view for May 2022 and a list of previous services.
- SA-012 MH12 HS 3456 History:** Shows a photo of the car and a summary of the last service.
- SA-012 MH12 HS 3456 Tasks:** A placeholder screen for tasks.
- SA-012 MH12 HS 3456 Photo Screen:** A camera interface for capturing photos of the car.
- SA-012 MH12 HS 3456 Comments:** A screen for adding comments about the car's condition before work start.

Row 2: Service Advisor (SA) Screens

- SA-012 MH12 HS 3456 Services:** A list of completed services with dates, costs, and ratings.
- SA-012 MH12 HS 3456 Add Service Items:** A placeholder screen for adding service items.
- SA-012 MH12 HS 3456 Service Items:** A list of service items categorized by type (Comprehensive, Standard, Basic, Ad-hoc, Customer Reported Issues).
- SA-012 MH12 HS 3456 Start Work:** A button to start working on the service.
- SA-012 Nexxon XM(P) Services:** A list of completed services for a different vehicle.
- SA-012 Nexxon XM(P) Service Items:** A list of service items for the Nexxon XM(P) vehicle.
- SA-012 Nexxon XM(P) Start Work:** A button to start working on the service.

Row 3: Technician (E) Screens

- E-067 Aniket Bhadane Services:** A list of completed services for Aniket Bhadane.
- E-067 Aniket Bhadane New Service Appointment:** A placeholder screen for creating a new service appointment.
- E-067 Aniket Bhadane Service Item Details:** A detailed view of a service item for vehicle MH12 YG 2341.
- E-067 Aniket Bhadane Create Appointment:** A button to create a new service appointment.

14. Next steps...

The next steps of this design process would include creation of high-fidelity wireframes and sharing within internal teams to get their inputs. Based on inputs from internal teams such as developers, the high-fidelity wireframes can be updated. This can be followed by in-depth Usability testing or A/B testing of new iteration of wireframes with the users. And subsequently updating the wireframes based on observations and feedback. Once the design handoff is given to developers, UX team can further assist developers in case of any queries.