# **TEACH 04 : HEURISTIC ANALYSIS**

##### **Due Friday at Midnight MST**

## **Instructions**

There is just one problem in this problem set, but with 6 steps:

1. Read the problem and all the steps carefully
2. Try to find a solution for each step individually before you meet as a group
3. In your group meeting, share your analysis with those in your group
4. Have one person collect the best answer for the problems and submit it in one document

Perform a full heuristic analysis for an “all glass” instrument cluster for the Tesla Model 3. All the controls are reachable through a single touch interface.

# **Step 1: Target Audience**

Identify the target audience for the Tesla Model 3. This may require a small amount of research on the internet. It will also require you to think about who the drivers of the car are likely to be. Identify several classes of users and write a 2-3 sentence mini-persona for each.**(Rochak)**

After pondering in the question and doing little research in the internet I have found following type of users.

1. Owners making six-figure: According to the research, it is found that 75% of the buyers of new models S were found to be rich people making more than 6 figures. Since model 3 is advertised to be more budget-friendly in 2019 this numbers might differ for model 3. People making good money demand for the feel and luxury that high tech device and easily controllable big glass display can provide. They want to reach to the maximum function they can in a single touch. They don’t care much about the expenses that come with the big display. They want the nice interface, more option on the desktop screen, and very less error while touching the screen.
2. Owner making less than 6 figures: 25% of the owner of the new model S make less than $100,000. These people want everything they can get for their money. They want smooth touch, easy and clear visibility on the screen. Since the screen is the only place to look speed or anything while driving no user want to compromise accessibility of immediate needs in the car like speedometer, odometer, AC etc.
3. Youngster: These group of people want sporty looks in their instrument cluster. They want clear interface and more option to control their premium sound system of model 3. They want easy control of autopilot in their car. These group of people don’t want any error while executing their task on screen. They don’t want the touchscreen to interrupt their smooth flow and demand a interface to have very high trustability.
4. Kids of Owner: These people are mostly teenage or in their early 20’s. They don’t even care about instrument cluster as long as they can check their speed. They just care about is a branding and feature the car can provide. They love having more feature and more option in their car’s screen. Even though these group of people are priority 3, Model 3 software has integrated gaming for these kind of user in their instrument cluster.
5. Wife of the male owners: This group cares more about the interior and brand more than a big touch screen. Some users in this group may be worried about big screen. They worry about the errors that can happen with a big screen. They will use any function in the car only after being 100% sure how to do it. They don’t want any risk in exploring more functionality. So more the options are in front-desktop screen better it is.

# **Step 2: Task Analysis (Taylor WIlliams)**

Identify the most important use cases. As with the target audience, this may require a small amount of research as well as some thought as to what the users of this interface are likely to do. Identify several use-cases and write a 2-3 sentence description of each.

1. **Use Case:** This Owner is driving his Tesla. He is an older gentleman so his eyes are not the best. So he likes that he can make the speed show larger on the glass instrument cluster.
2. **Use Case:** This Owner has changed up his normal commute and swipes on the teslas glass instrument cluster to check the range that he has left on his car. Super smooth and easy to check.
3. **Use Case:** Kids of Owner is taking his dad's Tesla for the first time. He presses the button to start. The glass instrument cluster lights up with the word Tesla and a clean graphic of the model 3 360 view, then shows the gauges. The kid’s eyes light up!
4. **Use Case:** Youngster gets in the new model 3 swipes through the glass instrument cluster and selects the new race cluster that is displayed**.** He loves that the cluster can get updated settings to the car.
5. **Use Case:** Youngster is driving to through the city with his new Iphone synced up playing his favorite playlist. He is able to swipe through the songs with easy while he navigates through the city traffic.

# **Step 3: Identify Criteria**

Identify the evaluation criteria.

For this situation it is important to understand the importance of each variable because all of them are important. If something is missing the device will fail.

Efficiency, learnability and simplicity have the most important part in this scenario. Efficiency (weight of 20%)because the driver needs to perform the tasks easily, without so many movements and time. Learnability (weight of 20%) to understand how the system works and become proficient using it in a short time, it is awful when you don’t know how to use something in a car after 2 months because it is hard to learn. Simplicity (weight of 20%) to master the system without so much knowledge about it. You could be a young/old man/woman without so much experience this kind of devices inside your car. All this will result in a 60%

Trust, motivation, and visibility are the next most important variables. Trust, if the interface is hard to understand the user will not feel secure to use it, but once the previous variables are covered the user feel more comfortable while using it. Motivation, this system is something you see at first glance when you enter the car, it should be motivating to use it once you turn the car on. Visibility, the system has to show everything and be available for the user all the time, if it isn't available the user will not use it. These will have a weight of 35%

Familiarity and mapping are the next most important variables in this scenario. Familiarity is important but almost every person that buys this kind of car has been in touch with a similar system. Mapping, once the system is learnable and simple it will be easier for the user to create a mental model of how the system works, it is important, but it could go after other variables. These will have a weight of 15%.

# **Step 4: Individual Analysis (Dalton)**

Conduct an individual analysis of each criteria identified from Step 3.

When it comes to individual Analysis it is important to understand each concept makes the analysis so important. Another thing to understand about the Analysis part is it to allow individual input, which allows different perspective to be examined on a deeper level of thought and mind. One thing to consider is efficiency. The term is very important in much of what we do today. Efficiency is one of those terms that means something must work at a good rate, and consistently. Without this important concept things we cease from working from its full compacticity. Motivation is another one of those terms that is needed operations of meetings, instruction, and guidance. With this principle, much can be learned but more importantly, motivation brings results, and actions when it comes to anything. With that in mind, we can understand the purpose visibility and learnability. These terms can work hand and hand. When it comes to learning, it's better if it’s clear, an as a result brings purpose and understanding. From a different perspective, learnability can work hand in hand with familiarity. This concept makes learning much more productive and efficient. These terms gives us a good understanding on exactly what is needed when it comes to criterias that are met from step three.

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| --- | --- |
| Score | Description |
| 10 | The most important issues for each criteria were clearly identified |
| 9 | The analysis is accurate for every criteria |
| 7 | There was one error or an obvious issue that was not described |
| 5 | The analysis is flawed in some fundamental way |
| 0 | There is no individual analysis presented |

# **Step 5: Variable/Criteria Hierarchy**

Create one or more variable / criteria hierarchies. If one criteria influences another, that should be described here.

One thing about these criterias is that they can work hand in hand. For example visibility with have a huge impact simplicity and trust. The reason why these concepts can work hand in hands is because visibility and simplicity are basically the same idea with some minor differences but with visibabily brings clarity while simplicity brings the fruits of easy understanding. Another thing to consider is that efficiency and simplicity can bring on the some amazing results for motivation and learnability. The reason why these terms can have a huge impact on one another is because is because when it comes to impact its based on simplicity and motivation, and with that brings a amount of learning. These are how these influence one another.

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| --- | --- |
| Score | Description |
| 10 | More than one criteria hierarchy is correctly represented |
| 9 | The most important criteria hierarchy is correctly represented |
| 7 | At least one criteria hierarchy is correctly represented |
| 5 | Elements of the solution exist |
| 0 | There is no criteria hierarchy presented |

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# **Step 6: Draw Conclusions**

Provide a summary of your findings. If you were to share the most important defects with the designer of this interface, what would you tell him/her? Each conclusion should be a sentence or two.

Conclusion 1: It’s a great element for the user, it may have the right elements at the right position, at the right moment. Sometimes this could be a distraction for the user which may result a damage in the future (crashing and other accidents). Be careful with the elements you include in a system like that, it could benefit or damage the user.

Conclusion 2: It is important for the user to use a efficient, learnable and simple system. If it is hard to use, has a slow system and it’s hard to understand then the user will be discouraged about the design.

Conclusion 3: Include an advertisement about the proper use of the system/design. Some user may not think about the damage of using it while driving. This is not a defect but could be an additional feature, maybe the main screen always showing this advertisements when turns on or something to advice the user about the proper use.

Conclusion 4: Letters should always have a big size so the user can see it from his position, it would be hard for the user to distinguish street names, song names and others if the letters are so small.