Superhuman — Week 2

Prototypes

We spent the past week working simultaneously on ideating, prototyping, presenting and testing many prototypes. Overall, our time was well spent between design thinking and design doing, but more importantly, we were able to gain insights from quick discussions and investigation with our mentors to further rule out ideas or features that would either be unfeasible, or not deliver value. This can often be just as, if not more valuable than simply validating assumptions and moving forward. There's a popular buzzword for this—failing fast.

Here's a summary of each team's progress so far:

**Air**

*Air-powered Global Trade Insights*

This week helped us narrow down our focus, and especially through the meeting with Ted as well as the second call with our mentors, we gained the following insights that helped us change our prototype.

- The data we were meant to receive and use would be highly masked and not what we were asking for, so we should focus on getting the dashboard up and running and then try to plug in that data we could get and combine other data streams (such as crude prices, gdp of destination countries and others) to create stronger models. We should start working on the presentations to make sure we can deliver a pitch that resonates with the company values and that is supported by the research we have conducted.

- With this, we decided to move on to a ReactJS dashboard that communicates with a web-scraping program and shows live data feeds and visualizations. Furthermore, we significantly reduced the scope of the data analysis to be able to provide a stronger visualization that correlates with more data. In terms of producing key insights, we have explored several predictive analysis tools, and are planning to use a combination of those from Excel and
IBM Watson Studio. Our idea is to combine the capacity and tonnage data provided from Etihad with market data (i.e. cargo fuel price stock fluctuations) to predict future import and export of Abu Dhabi Airport as a demonstration for the Dragon’s Den.

In terms of execution, we have been working on cleaning up the data through excel, visualizing it to better understand how to model it, and working on the structure and content of the pitch:

In terms of the more immediate challenges we are facing, we need to clean up and feed the data to the machine learning programs. Luckily, we were able to do so on Friday, and we’ve been working since then on both ends (user interface and back end) to be ready for this week. Furthermore, the next challenge is to start preparing for the pitch and creating the deck, but hopefully we can tackle that after Christian’s presentation.

**Virtuality**

**Ideation Process**

At the beginning of our ideation process, we wanted to create a VR experience that would give consumers insight into the journey of a cargo through Etihad’s Air Cargo terminal. We initially created a storyboard that we felt represented this journey. However, after our meeting on Tuesday with our mentors, Dave and Conor, our group
realized several changes needed to be made in our storyboard. Our former storyboard covered Etihad Air Cargo’s process as a whole, but came off as dull and boring. There appeared to be no exciting factor that would excite customers and increase awareness. The content appeared more as general knowledge of the journey, rather than highlighting exciting or unknown information about Etihad Air Cargo’s products/services.

We want to do more than simply create a video—we want this to be an immersive and entertaining experience for customers, while also potentially serving as a learning tool. Considering the fact that our VR has to not only excite our customers through the technology itself, but also through the content, we have decided to focus on Etihad Air Cargo’s service for transporting automotives called “FlightValet.” Dave and Conor agreed that this is a product that is not widely known about or understood. We will allow the customers to experience what it is like to fly their cars with such service, and by extension, bring attention to its existence. Virtuality is planning to create a VR simulation using 360 photos of Etihad Air Cargo’s landside terminal with an emphasis on bringing the FlightValet service to life. Given that this VR simulation will most likely be used in travel fairs, the group is also planning to design a 3D model of an exhibition space that would create the best experience for attendees.

Google Cardboard VR glasses with the old Etihad Air Cargo’s logo
(for use with the VR simulation):

We’re targeting Google cardboard in order to make the experience portable and accessible
Challenges

At the beginning of the week, our group wanted to create a VR simulation in addition to a gamified version of what we wanted to fully accomplish in our final VR prototype, since we would not be able to gather the correct footage to bring our full idea to life. Due to time constraints, creating a full game would most likely be not be possible. Our biggest challenge is time—three weeks is not close to enough time to see our ideas through fully. For our group specifically, the lack of technical backgrounds is a challenge. However, even if our prototype is not 100% completed, we want our core idea to come through clear and concise. So, this weekend and next week, we will work on becoming more familiar with the technical requirements of our project, and begin thinking about how to pitch it in an effective way.

WareSense

There are a number of key insights that we gained this week, through talking to our mentors, through discussing our ideas with Rory, our discussion in class, and I suppose, most importantly, what we, as a team realized from the prototyping process.
Our mentors, through their connections, helped us gain a better understanding of the current situation of the porters at Etihad cargo, as well as pre-existing measures, both preventative, and reactive, with dealing with the issue of heat syncope and the terrible summer months. With this in mind, we slowly realized that maybe our task was not to build a device that simply told an individual when they were dehydrated, but more so a solution to a system that would allow Etihad Cargo to monitor the wellbeing and vitals of its labor force, not just for health and safety purposes but with future uses such as workflow efficiency and the likes.

This insight was further cemented after our conversation with Rory when he suggested that we focus on just a few key features and not bog ourselves down with technicalities such as size of the device, or implementation across the terminal.

**Ideas**

With the insights noted above, we realized that the best fit for a wearable that suited our purposes, and solved many of our technicalities, was a band (similar to fitbit) around one's hand. It would have the sensor systems that we previously developed to work on the lanyard, whilst having the added benefit of not having to deal with things like whether they wore a collared t-shirt or not. We soon realized we'd need an incentive for the workers to wear this added device, and after conversing with Abood, we noticed that the current system of the ID on the lanyard could simply be moved to the WareBand itself by embedding and RFID chip. This would complement our future ideas for workplace efficiency, all the while necessitating that it be worn by the cargo porters.

**Paper Prototypes**
Digital Paper Prototypes:

- How it works?
  - The weight sensor records the total weight of the port.
  - Any drastic loss in weight will be identified and can be attributed to dehydration.
Ou Final Prototype: — The WareBand
Status Quo

As of writing this, we’ve successfully managed to send the temperature data to an online feed that is connected with IFTTT. On going above the threshold value we’ve coded, a notification is sent to the user’s phone with a link to, what is ideally, the porter profile stored in Etihad Cargo’s database (This part has yet to be implemented). There are 2 sets of LED’s, the first is purposed to display the status of connection (i.e. whether the worker is in premises or not) and the second (along with a buzzer) displays whether the worker is healthy or not.

Challenges

With the implementation of the WareBand we have a clear understanding of both the type of device that we wish to create and an understanding of the technology required to make it fulfill its purposes. We are currently waiting for the ESP32 chip so we can attempt to connect the pulse sensor to the online feed. If possible it would be great if we could implement some kind of RF technology to the working prototype for showcase purposes and connect data we get from WareBand to the database. If not, the rest of our time will be spent developing our pitch and our presentation of the product.

Hover

After meeting with Rory this week we gained insight into the needs of Etihad Cargo and the gaps that we can fill using technology. Etihad needs a tool or platform that can provide them with a comprehensive view of workforce utilization, health, and safety. The current system is not efficient in terms of keeping track of who showed up to their shift and who didn’t, it includes manual entry and evaluation of on sight
incidents like chemical spills in the warehouse, and does not efficiently keep track of workers' compliance to health and safety policy. For these reasons, Hover's ultimate goal is to create enhanced operational efficiencies through crafting a safer place for workers to maintain their health and performance, generated by a seamless and organized system.

For our final product we want to create an app that provides workforce analytics and provides the managers and supervisors access to real-time visibility into warehouse operations that include logging and viewing of incident details (time, location on a map, recorder etc.), getting immediate access to worker’s attendance, safety gear, and health indicators that include pulse rate and body temperature. Furthermore, the total number of workers that are safe in terms of attendance, health etc, is viewed at the top of the screen while those that have breached set limits are highlighted underneath so that the managers/supervisors have access to the staff member, their ID, certification, training, start date at organization etc. We plan on doing this by collaborating with the WareSense team and visualizing the data that they are going to generate.

This shows the login screen, where the user must log in using their ID # to access two options.
The search icon will transfer you to a page where it shows the amount of workers that day, and informs you of any alerts regarding three specific things; Attendance, Health, and Safety.

Through the map icon on the home page, you will be redirected to a map of the cargo warehouse and indicators will pop up to show any incidents that occurred. In the accident page, it will have a photo, short description, the date and time, and who it was reported by.
Challenges

In terms of challenges HOVER can foresee in the upcoming week, our main challenge will be figuring out how to seamlessly transmit the data WareSense will collect and visualize it in our app where it can be...
visualized in a clear, concise manner. In the upcoming week, we plan to work on our presentation and pitch, so we can rehearse our parts to deliver a powerful and effective pitch. We will tackle these problems by communicating with WareSense and testing our app design. In addition, we will watch pitch videos on YouTube and other platforms to polish our idea of powerful pitches, show our presentation to Professor Christian, Rory, and other instructors to gain advice, and most importantly, create a script to rehearse our pitch for the Dragon’s Den.