

TO: Seunghwan Jo
Nathan Wang

FROM: Team Nugget [Nate Saul, Samuel Graham,
Dingming Lu, Luke Bame]

DATE: January 28th, 2022

SUBJECT: D2 House of Quality



This memorandum is about the House of Quality. We evaluate and limit the product based on what are the customer requirements, who the customers are, and how they are going to use it. We calculate the final score to find out what are the most important points that we need to focus on.

Our current problem statement is that one should be able to open a door without the hands. With more detail, it becomes our current problem definition: the hands-free door should be easy to open, low effort to open, small by volume, easy to install, low cost, durable, aesthetically pleasing, easy to repair, safe to operate, quiet, compatible, purely mechanical, and able to customize the operation time.

From the House of Quality, most of the terms are easy to understand. These are terminologies that we need to explain. "Effort to open the door" refers to the force of opening the door, and "ease of operating the door" refers to the complexity of operating. "Time required to operate the door" is the time duration of the door from closing to opening. "Space filled by unit" is how large the entire product is. "Purely mechanical" means no electricity should be introduced in the product. "Customizability of door operation time" means the customized time of the door staying open.

The HOQ proved very significant in molding the way we thought about our final product as well as how we understand who we are competing with and the issue we are addressing. Doing the research into what exactly people want from our product as well as what our competition is currently doing to address the problem gave us insights into how we will approach solving the issue with the design process.

We chose to use four different personas in order to convey some of the people and jobs we are trying to reach. The range of challenges that these people face when using doors in their jobs or everyday life include sanitation, accessibility, using a door without hands, and an easy way to open a door. These people and their challenges were selected because they best represent the people that would benefit the most from our product.

If you would like any further details, please contact us at any of the following emails: Nate Saul (nmsaul@purdue.edu), Samuel Graham (graha205@purdue.edu), Dingming Lu (lu807@purdue.edu), or Luke Bame (lbame@purdue.edu).

Sincerely,
Nate Saul

Nate Saul

Samuel Graham

SG

Dingming Lu

Dingming Lu

Luke Bame

Luke Bame

Attachments:

- Four (4) Personas
- House of Quality Diagram

