Deliverable B: Empathize – Client Needs Identification

Gathering Data

The client is the Mill Street Brewery in Toronto. The team gathered raw data by taking notes during the first client meeting. Before the client meeting, the team had prepared questions for the client. The questions were prepared in a way that the team could have a general understanding of the important aspects of the project and construct certain parameters. To continue gathering the necessary data, the team will perform technical benchmarking using sources found online. The team will gather data and conduct research on other products that perform similar tasks. As well, the team will endeavour to see the brewery plant in person to better understand the process of bottling. The team plans on visiting other local breweries to see their processes and conduct research to compare their systems.

Interpreting Data

The product must have both specific functional and non-functional features, as well as any technical constraints that will have an impact on the product. In terms of functional criteria, the product must meet specific requirements. Firstly, the product must increase overall process efficiency by a minimum of 2%. The main factor that defines efficiency for this specific production line and can be accurately calculated is the increase in speed at every station in the line. Furthermore, the product must be capable of producing operating speeds for all process components. This suggests that when the user inputs a specific filler speed, the user will be able to see the resulting outputs of all other dependent systems. The product also must be used to determine the efficiency statistics of the process using the V-curve theory. This implies that the product will be based on the V-curve theory to determine the efficiency of the process. The product must also be able to provide information pertaining to the current level of efficiency of the process.

In terms of additional features, the product must meet specific requirements that do not directly involve a feasible way of measuring the efficiency of the project itself. Firstly, the product must be safe to use. The product will require little maintenance from the user. This implies that the interface and code must be easily accessible, organized, and any parameter can be altered at any time. The product must also be accessible offline. This implies that data can be gathered by the user during non-operating hours. Furthermore, the product must display longevity as well as be aesthetically pleasing.

Organizing Data

Following the interpretation of the data and its formatting to meet the client's needs, the team continues the process by organising the data into two subcategories: functional and non-functional needs. Functional needs are requirements the client provides that attribute to the general function of the team’s product. Such requirements include efficiency enhancement, offline accessibility, output of operating speeds, use of the V-curve theory, and additional information about the process's current efficiency levels. The non-function needs, although they aren’t specified by the client and don’t pertain to the process directly, do have a substantial impact on the quality of the team’s product. The aesthetic

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quality, product longevity, safety, and low maintenance levels of both our code and interface all serve as non-functional needs.

Establishing Relative Importance

The figure below displays the team's ranking of the clients' requirements. Ranking decisions were based on what the client displayed during the meeting and on a consensus among all team members.

Client Needs	Prioritization
Product will be aesthetically pleasing	**3**
Product will display longevity	**2**
Product will increase overall process efficiency by a minimum of 2%	**1**
Product will be accessible offline	**2**
Product will be able to output operating speeds for all components of the process	**1**
Product will be able to provide information pertaining to the current efficiency level of their process	**3**
Product will require low maintenance from user	**1**
Product will determine efficiency statistics of the process using the V-curve theory	**1**
Product will be safe to operate	**1**

Note: prioritization range from 1-5: The highest priority being 1, whilst 5 being the lowest.

Reflect on Process

The team requires some additional information to produce a quality project. If possible, the desired information is about conveyor speeds and maintenance data. Now, without knowing these parameters, it is difficult to create the required program. If this data is not provided, there may be a need to directly reach out to Mill Street and ask for it, or just ignore that part of the process. However, doing this would likely result in a less accurate product, so the data would be of great assistance. There is also the option of benchmarking similar processes to try and make inferences about what the data is likely close to, to at least somewhat increase the accuracy of the product.

Problem Statement

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Mill Street Brewery needs a programmed interface that allows the user to impute a filler speed, resulting in the output of all other variables at their maximum efficiency, as according to V-curve theory. The product must be accessible offline and increase the overall line efficiency by a minimum of 2%.