

# **Deliverable B – Need Identification and Problem Statement**



## Group 5

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The problem is to come up with a solution for recycling responsibly and making it an easier task. The misplacement of a recyclable item results in them being found in landfills which defeats the purpose of recycling. It could also cause costly damage to the machines at the recycling plant. The goal is to improve the way we recycle to the accuracy of 90% and higher. The client emphasized the need for the solution to be simple and user-friendly. It was stated that the result should incorporate an interacting feature that grasps the user's attention while using it. The client also wants people to learn more about recycling and its effect. Below is a summary of the customer's needs:

- It needs to be user friendly: the majority of the demographic should be able to use the tool with ease;
- It needs to be accessible: it should not be a burden to use the tool, it should be quick and readily available;
- It needs to be cost effective: for the tool to be as accessible as possible, the price must be low enough to implement it on a large scale;
- It should educate the user: the goal is to eventually have the user make independent choices without the need of the app;
- The tool needs to keep the end users engaged;
- The tool must not have an error margin of higher than 10% when sorting.

In addition, the client has not given design constraints. There is no specific feature or functionality that he necessarily wants, as long as the tool solves the problem. Discussed ideas with the client included making a game, the implementation of a reward system, or something else interactive to keep the user engaged and wanting to continue recycling. To summarize, household items worldwide are being incorrectly sorted into recycling bins which causes contamination of the recyclable material which leads to the creation of unnecessary waste that is being diverted into landfills; individuals need a simple and user-friendly tool to help them sort their everyday recyclable items.

In order to design a product that boasts high usability and is effective at solving the problem, the needs of all potential users must be taken into account. The long-term goal of the recycling identification system is to help users make informed choices about their recycling habits.

to avoid unnecessary landfill waste. Perceived usability, adaptability, and effectiveness are metrics that will be taken into account. User-friendliness will be determined based on the number of active users employing the system and their frequency. Alibaba has introduced a similar feature on their online marketplace app *Taobao* and *Alipay*. Within 30 days, 12 million users (of 674 million active users as of June 30, 2019) used the new feature on *Taobao* [1][2]. Within six months, 25 million people were using the service on average once per week, representing an approximate 0.19% of users on *Alipay* [1][3]. A realistic aim is thus to engage 1% of regional citizens within the first six months with a 5% engagement by the end of the year, following the release of the system. These goals are based on the current user standards and based on the local support principle. According to a study conducted by Nielsen[4], the origin of the product is the most important factor as reported by 75% of their global respondents, with the preference being local. Users perceive this solution to be widely available and applicable to their lifestyle, and *Alipay* has proved this theory with users being tracked across 16 cities. Lastly, users perceive this solution to be accurate. Thus, the margin of error needs to be as low as possible. A team from *Liverpool Hope University* was able to successfully sort items 92% of the time[5]. Client expectations reflect industry standards, at around 90% success rate. Based on user perceptions the system must be adaptable, intuitive and user friendly as well as accurate.

## References

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