Reflection Report on Pot-pulator

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1 Changes in Response to Feedback

1.1 SRS and Hazard Analysis

Changes were made to SRS based on feedback from teammates, the instructor, and TAs. Requirements were adjusted as the design and scope of the project changed.

1.2 Design and Design Documentation

Design underwent many major changes throughout the process based on feedback. Between Proof of Concept and Rev0 Demo, feedback from teammates influenced a major change in the final design of the tray dropper subsystem. After Rev0, feeback from the instructor and TA influenced the revised design of the pot dropper subsystem, increasing the accuracy of the machine overall.

1.3 VnV Plan and Report

The VnV Plan and Report changed based on feedback from peers. Testing plans were updated to better ensure all components of the machine were being tested thoroughly, and all edge cases were considered when conducting testing.

2 Design Iteration (LO11)

[Explain how you arrived at your final design and implementation. How did the design evolve from the first version to the final version? —TPLT]

3 Design Decisions (LO12)

[Reflect and justify your design decisions. How did limitations, assumptions, and constraints influence your decisions? —TPLT]

4   Economic Considerations (LO23)

We believe there is a market for our product. All Sheridan Nurseries farms are ran in the same way as the farm which we used to influence our design. The cost of the manual labour does not justify the purchase of the machines that are currently available on the market, but our low cost solution is perfect for Sheridan Nurseries' current situation. It is also a great solution for any industrial potting farm which owns a soil and seed filling machine, but does not own a pot and tray sorting machine. Marketing the product would involve giving live demonstrations to decision makers at the farms or distributing videos showcasing the functionality of the machine and highlighting the value it will provide. We estimate it would cost approximately $700 to manufacture if our current sourcing methods are used, but this price can be drastically reduced if it were to be manufactured in large quantities. We would charge a price which would translate to a 60% markup. At a cost of $700, this would mean setting the price at approximately $1150. We would be making about $450 per machine, and our break even point would be dependent on the amount of capital we would be required to invest to establish a manufacturing process, and the amount of fixed costs that would incur on other activities such as advertising.

5   Reflection on Project Management (LO24)

5.1   How Does Your Project Management Compare to Your Development Plan

The project resembled the structure outlined in the development plan well. meetings were set, updates were given regularly, and each member was held accountable for their contributions to the project, this has a direct correlation with setting reasonable goals in the development plan and not shooting for the moon with meetings and objectives.

5.2   What Went Well?

Overall, the design and integration of the capstone went well, dividing the project into subsections when surprisingly well and each member being responsible for their subsection with standardized communication made integration run smoothly.

5.3   What Went Wrong?

A consideration that was overlooked at the beginning of the project was the amount of impact that precision would have on the project, while sections and parts were designed to be as accurate as possible, the designs relied on perfect alignment and sometimes ideal situations, these where not accounted for in the design.

5.4 What Would you Do Differently Next Time?

If we had the opportunity to go back and change our project we would focus much more on developing a more redundant machine that relied less on accuracy and precision. We would also set smaller goals and set aside more time to integrate separate subsystems and tuning.