Automated Homebrewing Machine

Status: Filled

Group Members: MSE Team: Ryan Lymburner, Derek Muxworthy, Jeremy Thompson,

Jordan Sciberras

BUS Team: Karan Thakur, Kavi Sekhon

Sponsor(s):

Supervisor(s): Kevin Oldknow, PhD, PEng, Lecturer, Mechatronic Systems Engineering

Amr Marzouk, PhD, PEng, Lecturer, Mechatronic Systems Engineering

Project Description

Summary

The craft beer market is rapidly expanding across the globe and Vancouver in particular is poised to disrupt the industry with the growing number of microbreweries in the area. These craft beers offer a greater variety of styles and recipes in comparison to the traditional beers offered by Budweiser, Molson Canadian, and alike.

Our team is in the process of designing a desktop brewing system that is able to automate the brewing process from start to finish. As homebrewers, we enjoy the process of experimenting with recipes, but hate the hassle of manually monitoring temperatures, timing, cooling, etc. Our system aims to solve these issues while still maintaining customization and ease of use.

Market

"Pico is a fully automatic craft beer brewing appliance that allows anyone to brew 5L mini-kegs of professional quality craft beer. Pico uses convenient, ready-to-brew PicoPak ingredient kits produced by over 50 of the world's most interesting craft breweries." With a presence of several other self contained beer brewing systems, the market for automated brewing systems is validated; craft beer consumers are actively looking for ways to enhance their homebrewing experience.

Scope

- "Create a hardware device that is able to brew beer in a table-top setting.
- "Use wireless integration to control brewing aspects remotely from a smartphone application.

Project Features

As a team we have currently identified two potential markets surrounding the homebrewing scene. At the moment we are looking to target inexperienced individuals who would like to brew beer with a completely automated "Keurig"-style approach with pre-packaged ingredient kits. Our roadmap for features includes the following:

- " Automated:
 - o Mashing
 - o Sparging
 - o Boiling
 - o Adding ingredients
 - o Cooling
- " Smartphone integration with brew notifications
- " Sanitation control
- " Stretch goals:
 - o Forced carbonation with CO2 canister
 - o Fermentation monitoring
 - o Social recipe platform
 - o Kegging

Note: This is not an exhaustive list and is likely to change with further market research.

Deliverables

- 1. Initial market research: November 2015
- 2. Establish brand design and landing page website: December 2015
- 3. Survey potential customer/partners for input: January 2016
- 4. Begin construction on initial prototype: January 2016
- 5. Begin A/B testing prototype with beta platform: April 2016
- 6. Refine design and iterate prototype: April 2016 July 2016
- 7. Finalize product for demonstration: August 2016