PSU Makerspace Capstone

Overview
In order to solve the problem of not having a prototyping facility that adequately meets the needs of both Penn State students and the larger Central PA business community, the PSU Makerspace team proposes to build a rapid prototyping lab at Penn State. Commonly referred to as a Makerspace, a rapid prototyping lab would allow businesses, entrepreneurs, and students within the community to build almost any prototype. Our team created a business model, optimal layout and user research survey to determine the needs of a State College makerspace and the necessary equipment to provide in the space.

Objectives
To design a makerspace for rapid product creation and realization that best caters to the needs of the State College community of students, faculty, entrepreneurs, and small businesses.

Approach
● Gathered customer needs through weekly feedback loop with sponsor
● Divided customers into 8 groups based on how they would use the makerspace and how much they could pay for the makerspace
● Visited 4 total makerspaces in Philadelphia and Pittsburgh
● Created a survey with 119 elements to capture makerspace interest from central Pennsylvania community
● Created physical and CAD models of proposed makerspace layout
● Created 3 prototypes for the survey to ensure high quality before sending it out
● Sent survey out to EDSGN list serve, CREN network, Hack Pittsburgh, Techshop, Nextfab
● Received 86 results
● Analysed the results using Pivot tables in Excel.

Outcomes
● The project is estimated to cost $20,637 dollars per month
● The makerspace plans to charge $45 per month for community members
● The makerspace plans to charge $75 per month for community members
● The makerspace is estimated to be profitable in 39 months