| **Need:** | **N-B:** | **Benefits:** |
| --- | --- | --- |
| In spaces where machinery and tools are provided, users need a way to get training and access, while administrators need to provide that training, security, and cost analysis. | The largest single benefit is the ability to easily access and train on new machinery/tools. Our largest cost for users to use our solution is purchasing the materials/machinery needed to fabricate a portal box. We’d also like to explore outsourcing production to makerspaces with the machinery needed for fabrication. | The implementation of the portal boxes opens versatility depending on the features we include such as being able to increase security or increase accessibility or decreasing financial cost. With the increase in security and accessibility, there is also a potential risk of increasing the overall cost of the project. |
| **N-A:** | **Problem Definition** | **B-C:** |
| The current iteration of the portal box already secures a means of training, security and accessibility; however, by making improvements by substituting components or adding/subtracting parts, we can optimize the cost:effectiveness ratio. | Our portal box iteration helps users who want to independently operate machinery safely and confidently by providing data analysis, proactive safety measures, and an inviting/understandable interface for new users. We will reduce the cost and effort required to run a space providing equipment access when compared to conventional lab/makerspace models (ie: booking appointments, workshops, direct supervision, paper logging). | The portal box is a compromise that allows for both anytime access for a wide range of people while still protecting a space from liability. Additionally, the portal boxes could be capable of collecting and auditing information to ensure smooth operation. |
| **Approach:** | **A-C:** | **Competition:** |
| Our idea will be implemented through an iteration on top of the latest version of the portal box. We will seek to decrease the cost, footprint, and barrier to entry, while increasing the accessibility and security. | The most compelling reason our product outperforms our competition is that our idea provides a way that allows us an additional way to ensure that people are able to use the machines while also giving them the option of not having to rely on technicians or appointments during their limited time thus allowing more students to use the machines overall while giving us an extra layer of security as if there was a tech present. | Other spaces with tools have implemented usage schemas involving varying levels of oversight. Some require machines to be reserved with direct supervision, some have open hours, some rely on workshops with many users at the same time, and some spaces simply allow anybody to use anything. Even in spaces with similar levels of supervision to ours, their methods of tracking training and usage per-user differ greatly from ours (paper vs online). |