Socio-Economical Impact, Business Objectives, and Gap Analysis

The implementation of the in-building navigation system will provide multiple benefits such as quality of life benefits and competitive benefits to other universities. Quality of life benefits are rather straight-forward as the mapping system will allow for easier travel for visitors and members of Oakland University. This will allow for guests to find their way around campus faster than having to use any of the maps or guidance posts. In turn, this will make Oakland University more attractive to first-time visits from potential students and could make these students choose Oakland over other universities due to the ease of getting around the campus. The implementation of the in-building navigation system will also provide an economic impact on activity time. The usage of the maps will allow for faster travel time by workers throughout the building. By spending less time searching for rooms, assistance will be quicker and tasks can be completed faster.

The objectives of this project are: 1) To supply a simple **website/app** that will allow for users to visit and create an account to save routes and use the navigation software, 2) Set up beacons to allow for complete coverage of one of the Oakland University buildings and the rooms contained within, 3) Use a navigation routing algorithm, based on the Dijkstra algorithm, that will provide the shortest route from the user location to a selected location through their building, and 4) Provide a functional list of not only room numbers, but actual area names for finding specific areas, such as the financial aid office or the Registrar’s Office.

As an analysis of the gaps between our current state at the beginning of our projects implementation and our ideal of a working app/website that provides a shortest path map for the buildings at Oakland University, we have a number of shortcomings to fill. First off being the acquirement of our beacons. We have already begun to fill that gap as we have purchased beacons and will be repaid through available project funds. The second gap we have found to be between having a working website/app in which we will run the mapping from and will provide the interface users will use. In our present state, we have a rudimentary site completed with basic login and logout functions. We shall continue to build upon this foundation and add the navigation functions and work with the beacons to implement their capabilities with the app to allow for real time tracking. Our last gap and area of improvement is in our mapping resources. Right now we have the mapping blueprints for only one of the buildings at Oakland University and it limits our choices for a sample test of the application as well as it would be required for a full rollout of the in building navigational program.