

Abstract

The IPRO 319 team created a web application for analyzing costs of warehouse operations. The Logistics Outsourcing Tool allows companies to determine cost-effectiveness of outsourcing operations in a given warehouse. In order to create an effective and relevant model, we spent the bulk of the time researching important costs and relationships associated with each warehousing activity. The necessary data came from interviews with industry workers, a warehouse site visit, and journal research. As we designed the tool, our attention was focused on the following elements within a warehouse: **labor, facilities, and equipment**. After completing research phase, the team was divided into three main sub-teams: the mathematical modeling team, the marketing team, and the tool development team. All members were additionally included in the quality assurance process.

The Team of IPRO 319

Sponsor:

Warehouse Education and Research Council (WERC) and the Kern Family Foundation

Faculty:

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Mathematical Modeling Team

The team described the mathematical relationships between input and output variables (costs) using MS Excel. This model is the basis for the logic of the web tool.

Marketing Team

The team created all marketing materials, IPRO Day deliverables, and presentations for the sponsor and class guests. We also facilitated coordinating project documentation throughout the semester.



Sasha Kerstin



Kabir HyoungTae Juhan Maxime

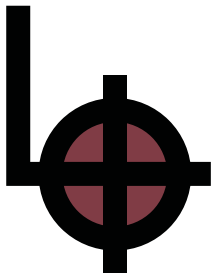
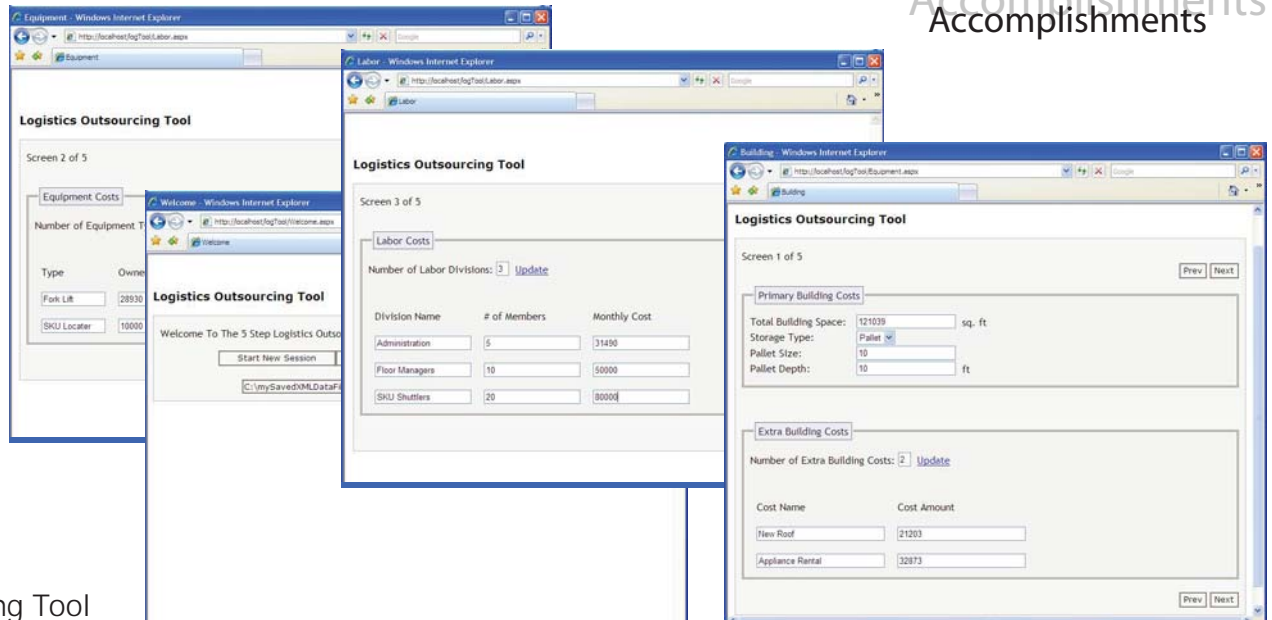
Tool Development Team

The team developed the web version of the Logistics Outsourcing Tool. We got the cost relationships and input variables from the mathematical modeling team

Obstacles

The main obstacle for the development of the model was the **complexity** of real world businesses. As a team, we had to **identify most common warehouse activities** by conducting research. The next step for addressing the problem was understanding the **key input and output variables** and how they relate to one another. **Sharing source code** among team members was a challenge. Only one member could work on the code at a given time. The sub-teams had difficulty **working in parallel** due to the nature of the project. Naturally, the mathematical modeling had to occur before tool development, and IPRO deliverables were produced as the final product. The teams worked on overlapping the processes as much as possible to achieve our goal within time restraints.

Accomplishments



Inputs

Outputs

