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Deliverable B - Needs Identification Project Group 18

The Centre for Entrepreneurship Education & Engineering design, otherwise known as CEED, is a non-profit organization that has supported the entrepreneurial spirit at uOttawa to empower students and professionals alike to achieve their full potential.

CEED provides different services such as 3D printing and laser cutting at the "Makerspace" along with other heavy machinery for any shop related projects at the Manufacturing Training Center (MTC) to help individuals create their envisioned products. To that end, they've asked us to help them automate something within their workspace using the Ross DashBoard tool to help increase the productivity and efficiency of their workplace.

This report intends to identify and organize the users and customer's needs based on the information gathered during the last client meeting along with our observations of the CEED space after touring their facilities.

CEED's needs as our client could be organized into two categories. The first category regards efficiency at their workspaces so that users can make the most of their time in the space and take full advantage of the resources that CEED provides. Second, managerial organization of the workplace to help staff stay on top of their duties thus providing a better work environment for the CEED users

In this section, we'll be discussing CEED's need for increased workspace efficiency. A common occurrence in Makerspace, is that users seem to lose track of time when they're diving in their project ideas. As a result, some equipment, such as the laser cutter, seem to get crowded especially during the busier seasons. Another issue that arises due to that is the users losing track of the time they have left to access the space itself. At Makerspace, time is of the essence. The more organized the space itself becomes, the more time will be saved thus increasing the efficiency of the space.

Managerial organization is a common concern in a public workplace, specifically for the makerspace due to the large variety of equipment and tools they use. The staff have expressed a need for a management system to keep track of tools in use and the one using it. From time to time, users tend to move tools and do not return them to their appropriate storage space, which

creates a mess both for the staff and the users. Another problem the staff face is the lack of a proper inventory system in place. This causes some disorganization and makes working and answering users' inquiries a lot more difficult than it needs to be.

The following table organizes the clients' wants in order to help visualize a fuller picture of the situation at hand:

Client Need	Need Interpretation	Type of Need
Remind users how many hours left in the day	Help users manage the time they have in the workspace	Organizational
Machine vacancy monitoring	Help user know what machines are free before going to the workspace	Organizational
Interactive workspace map	Help users to have a better understanding of each area of the workspace	Organizational
Inventory management system	Staff would like to have a better grasp of what materials are available/missing to ease the ordering system	Managerial
Estimated timer for 3D printers	Help users manage the time they have in the workspace	Organizational
Reminder to encourage workers to move	Encourage users to be involved in more healthy practices instead of sitting all day	Managerial
Indoor environment monitor (temp, humidity, etc)	Machinery and equipment are sensitive to certain changes in the room and staff would like to keep track of these changes	Managerial
Security system	Help staff keep the workspace secure during the day and when not in use	Managerial
Inventory locator	Helping new users know where tools and equipment are so they don't have to ask a staff member.	Organizational

The next table ranks the importance of the qualities the client would like in their product:

	Customer Statement	Interpretation	Importance
1	Easy/Useful	Product must be easy to use, and genuinely improve the productivity of one of the CEED spaces	5
2	Attractive	Product's cosmetic design must fit well within the CEED space	4
3	Stable	Product easy to use and not have many bugs or constantly crash	2
4	Maintainable	Product must be intuitive and easy to repair in the event of an error 3	
5	Inexpensive	Product must cost \$100 or less	5

These needs have arised in other workplaces besides just CEED. So other solutions have been developed to fulfill these needs. Interactive maps are used in shopping malls in order to show customers where each store is (1). A product like this can help CEED users tell which machines are available to use before going on site. Indoor humidity gages can be bought that read the amount of humidity in a given room (2). A product like this would be helpful in MTC because it can get very humid in the workspace due to all the heavy machinery. There is software that is designed to show where in a workplace certain tools and equipment are stored and when a supply of certain products are getting low. In the CEED spaces new users have trouble finding tools, equipment, and materials needed to work on their projects. A system like this would help new users find the things that they need in order to complete their work. Finally, a product that could tell users which machine is under use would be very beneficial to the space as it would significantly cut wait times and situations where it could get too crowded. A similar product that this could be modelled after is the parking space guiding systems (3).

In conclusion, the University of Ottawa CEED workspace would greatly benefit from an automated system pertaining to the needs listed above, which can be best summarized by the problem statement: The University of Ottawa CEED workspace has need of an automated system that is easy to use, fits the CEED aesthetic, durable, and inexpensive which makes use of Ross Video's "DashBoard" tool to increase the space's organization and productivity.

References:

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