

ABSTRACT

The development of the industrial sector has entered the industrial era 4.0. The hallmark of Industry 4.0 is that all manufacturing systems are connected because of the integration between communication information technology (ICT), internet of things (IoT) and cyber-physical systems. This provides benefits in improving the speed and flexibility of production, improving services to customers and increasing revenue. In preparing students' abilities in facing the industrial era 4.0, Telkom University supports the preparation, one of which is through the bottling plant simulator. In the process of control and monitoring, the bottling plant simulator already uses the Human Machine Interface (HMI). However, the usability value of the HMI bottling plant design calculated through the System Usability Scale (SUS), is still relatively low at 30.5. Under these circumstances, an evaluation is needed to increase the usability value of the HMI bottling plant design. The User Centered Design (UCD) method is considered effective in increasing the value of usability in system design. Therefore, in this research a redesign of the HMI bottling plant will be carried out using the UCD method to produce a higher usability value than before. The designed HMI is web-based HMI by utilizing the Internet of Things. Using the UCD method, the usability value of the proposed HMI bottling plant increased from 54.5 to 84.9.

Key Words : *Industry 4.0, SCADA, Human Machine Interface (HMI), User Centered Design (UCD),, Internet Of Things (IoT)*