

ABSTRACT

Increasing land conversion and limited agricultural land are significant challenges for the agricultural sector. This challenge is increasing with the interest of the younger generation who prefer to work in offices and creative industries. Telkom University Surabaya also highlighted the problem by establishing Rooftop Farming Center (RFC) as a rooftop land management community using smart farming technology. Currently, the Rooftop Farming Center community has an Internet of Things (IoT)-based monitoring and control system for smart farming technology management. The need for an easy and practical monitoring and reporting system for agricultural products, as well as inventory, is urgent in optimizing smart farming management. Therefore, it is necessary to develop a mobile application for monitoring and reporting smart farming at Rooftop Farming Center. With this system, the manager can know the condition of the growth of products resulting from smart farming technology in a certain time span and can take action for maintenance. The research was conducted with a focus on the scope of the Rooftop Farming Center and was not integrated with the Internet of Things.

This research aims to use the integration of design thinking and scrum methods, called DT@Scrum in developing a mobile application that facilitates the community in monitoring and reporting on the conditions and results of smart farming technology products. The testing methods used in this research are usability testing using SUS (System Usability Scale), black box testing, and user acceptance testing.

This research successfully developed a mobile application for smart farming monitoring and reporting using the DT@Scrum approach. The 100% success rate in functional testing and user acceptance, as well as an “excellent” usability rating with a System Usability Scale (SUS) score of 81, proves that this application is functional, user-friendly, and well-received by users.

Keywords: *mobile application, smart farming, design thinking, scrum, system usability scale, black box testing.*