

ABSTRACT

The development of information and communication technology is currently progressing very rapidly. The use of internet-based devices is increasing in the educational environment, especially at Telkom University. Wi-Fi connection becomes very important for academic, administrative, and other activities for students, lecturers, and staff at the Faculty of Business Communication and the Faculty of Business Economics. To maintain service quality, a reliable Wi-Fi management system is required. The main problem faced is the lack of real-time monitoring and analysis of Wi-Fi network performance in both faculties.

The solution offered to overcome this problem is to design a Wi-Fi Monitoring website specifically for the Faculty of Business Communication and the Faculty of Business Economics. This website aims to improve operational efficiency through real-time monitoring, data analysis, and Wi-Fi service quality improvement. With this website, the IT team can monitor the performance of Wi-Fi networks in both faculties, including upload speed, download speed, delay, and jitter. The project includes the creation of a website with important features such as website load time, login verification, monitoring dashboard, access point management, router data, data transfer speed, and data storage.

The results of testing Wi-Fi networks at the Faculty of Business Communication, Faculty of Economics and Business, and Manterawu Building at Telkom University. The Faculty of Business Communication showed download speeds of 21.9 Mbps, uploads of 6.74 Mbps, jitter of 1.53 ms, and delay of 0.29 ms. At the Faculty of Economics and Business, jitter was recorded at 0.89 ms and delay at 0.03 ms, although speed data was not available. In Manterawu Building, download speed reached 11.32 Mbps, upload 1.75 Mbps, jitter 0.97 ms, and delay 0.04 ms. The user survey revealed that 92.22% of respondents felt the system had met expectations. The performance of the Wi-Fi monitoring website is considered optimal because it is able to provide accurate and real-time data related to network quality, which facilitates monitoring and supports decision making based on the available data.

Keywords: Wi-Fi, Telkom University, network, download speed, upload speed, jitter, delay, user survey, network performance, monitoring system.