ABSTRACT

Telecommunications networks are growing day by day, starting from 1G, 2G, 3G, 4G, and currently, Indonesia is intensively developing 5G networks. The 5G network requires a frequency spectrum in three different bands: low band, mid-band, and high band. The minimum bandwidth in the 5G network is 80 MHz up to 100 MHz, five times more than the 4G network, which only requires a minimum bandwidth of 20 MHz. 5G networks can provide various services that did not exist in previous generations, such as the Internet of Things, Augmented Reality, and many more. In 5G development, MVNO can focus on service development so that MVNO will have market opportunities in 5G technology. This study will discuss the feasibility of implementing MVNO on 5G networks in Indonesia based on technical, economic, and regulatory analysis.

The results of the technical analysis show that each user growth scenario requires a different number of gNodeBs. The needs of gNodeB are adjusted to the growth of users every year. Based on the data rate calculation, the 2300 MHz frequency has a data rate that meets the ITU 5G Key Requirement. The results of the economic analysis show that the Full MVNO, Light MVNO, and Brand Reseller business models are feasible to apply because the three business models have NPV and IRR values above the specified threshold. The Light MVNO business model is the most feasible to apply from the three business models because it has the highest NPV and IRR. Based on the regulatory analysis, MVNO can be categorized as a telecommunications operator following Government Regulation Number 52 of 2000 concerning the Implementation of Telecommunications. In addition to the existence of Undang-Undang No. 11 tahun 2021 tentang Cipta Kerja, it also strongly supports the implementation of MVNO in Indonesia.

Keywords: 5G NR, MVNO, MNO.