Techno-economic analysis of UMTS900 and UMTS2100 for rural connectivity in Tanzania

Authors:. Simba F.; Trojer L.; Mwinyiwiwa Bakari M.M.; Mvungi N. H.

Abstract

Rural areas of the developing countries lack Information and Communication Technology (ICT) infrastructures such as access network, also known as last mile connectivity, to deliver ICT services. The lack of connectivity is due to high cost of implementing ICT infrastructures. Wireless technologies are envisioned as candidates for rural connectivity. They are not only easier and faster to deploy but also cheaper than the wired technologies. This paper presents a techno-economic analysis of two wireless technologies in Tanzania, called third generation (3G) implemented at 900MHz and at 2100MHz frequency bands. Objectives of techno-economic analysis are to investigate economic feasibility and to determine a cost effective option between the two connectivity options. Results show that, 3G at 900HMz is a feasible and cost - effective connectivity technology in Tanzania. These results can be generalized to other developing countries, since rural areas pose similar characteristics with regard to ICT infrastructure development**.**

Keywords: Rural Areas; Techno-economic; UMTS; Tanzania