

ABSTRACT

Due to the strenuous demands on the available spectrum and bandwidth, alongside the ever increasing rate at which data traffic is growing and the poor quality of experience (QoE) faced with indoor communications, in order for cellular networks to remain dominant in areas pertaining to voice and data services, cellular service providers have to reform their marketing and service delivery strategies together with their overall network architecture. To accomplish this leap forward in performance, cellular service operators need to employ a network topology, which makes use of a mix of macrocells and small cells, effectively evolving the network, bringing it closer to the end-user.

This investigation explores the use of small cell technology, specifically Femtocell technology in comparison to the already employed Wi-Fi technology as a viable solution to poor indoor communications. The performance evolution is done by comparing key areas in the every day use of Internet communications. These include HTTP testing, RTP testing and VoIP testing. Results are explained and the modes of operation of both technologies are compared.