

## **Abstract**

The development of telecommunication technology has now led to network based broadband service. On the side of the access network has grown to technologies such as HSPA, EV DO, WiMAX, dan LTE is capable of delivering data access in the order of MB per sector. So that mobile network operators are require to upgrade the existing backhaul networks. Because in the reality the cost of upgrading backhaul network are very expensive. Backhaul network needs the other side also increased to 30 Mbps per Node B. So with the existing backhaul network by E1 or T1 solutions also become very expensive.

This paper aimed to analyze and know the level of mobile backhaul network bandwidth needs to be able to serve the broadband service within in the next viewers. Besides that, this paper is expected to make a backhaul network design and good balance, so that will be able to reduce spending on network management cost that do not need to obtain an efficient backhaul network management.

The result of this research showed that the need of cellular backhaul bandwidth at Operator X for Jabodetabek area for 5 next years up to 655.996 Mbps, with data traffic growth 119,51%. Design and balance backhaul network use scenario where base station added device interworking function or TDM over IP (ethernet).

*Keywords: Broadband, Backhaul, Base Transceiver Station, Node B, E1, T1*