

Title of Article : *Telecommunication Cost Reduction in Nigeria through Infrastructure sharing.*

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Abstract: This paper reviews the cost structure of mobile telecoms operations and presents collocation strategies aimed at reducing the total cost of ownership of mobile telecom service. An approach where everything on the site except for the shelters are shared by two or more operators is proposed with the shelters installed either in a storied fashion or placed side by side while the cost of electrical energy, cooling, tower construction, security, and fuel is shared by the operators on the site. A typical base station BTS requires 3000W of power while the air conditioners are typically the 2HP capacity type requiring about 1500W. Lighting (security lights inclusive) can require up to 3000W. All of these loads sum up to approximately 10000W. This compared with the typical generator capacity of 20KVA shows that an extra shelter (BTS) load of 3000W can be accommodated by the generator on the site with the air conditioning shared in the form of a central air conditioning system. The use of ducts has been found to reduce the buildup of heat in the shelters thereby reducing the cooling required by up to 20%. The shared resource can be outsourced to a third party while each operator controls the access to their individual shelters. The provision of strict enforceable legislation will also ensure that operators get fair treatment regardless of their status on the site. Collocation has the capacity of reducing the capital expenses (CAPEX) and total site dependent operational expenses (OPEX) for each of the by up to 50% depending on the lease agreements between the operators and at the same time facilitating a faster deployment time for new operators in a mature market and ultimately reducing telecom tariffs.