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# SDN-enabled Infrastructure Sharing in Emerging Markets: CapEx/OpEx Savings Overview and Quantification

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#### Abstract:

The paper quantifies the importance of network resource sharing in leveraging Software Defined Networking (SDN) in mobile network infrastructure and reducing operation costs between multiple operators, especially critical to extend broadband access in less populated and thus less profitable rural areas. The paper starts with an overview of the concept of infrastructure sharing and different levels of sharing, such as RAN, backhaul and core sharing, and then attempts to quantify the economic impact of sharing. The impact is estimated in terms of how long it takes to recover CapEx investments and make a network profitable. This is illustrated utilizing the use case example of the South African environment that full sharing may allow an order of magnitude reduction in time needed to reach profitability, which may allow for profitable operation in rural areas and easier entry of smaller operators into market.

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