

A Techno-Economic Model for LTE Broadband Technology in Rural Areas (Egypt)

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The increasing demand for high-speed and reliable broadband has been growing in Egypt, and the digital economy accelerated that growth, making the public, businesses, and government increasingly reliant on broadband connectivity. However, despite the government's efforts, there is still a digital gap between rural and urban areas. This article focuses on providing policymakers and national regulators with a tool to expand broadband internet connectivity in rural areas in Egypt. The techno-economic model is a method of analyzing the economic performance of the technical performance of the technology. In summary, this article focuses on the last mile technologies alternatives that consider customers' needs and overall costs. This techno-economic model goal is to expand broadband internet connectivity in rural areas in Egypt, considering the technical performance, economic issues, and financial attributes. This article employs a case study to demonstrate the implementation of the techno-economic model based on actual data obtained from a municipality located in New Valley Governorate. The results demonstrate that negative net present value tends not to be executed due to economic unfeasibility; the need for collaborative work between all the stakeholders to make broadband connectivity essential. This article is a work in progress and will continue investigating the different access technologies such as Fiber to The Home (FTTH) and Low Earth Orbit (LEO).

Keywords: Techno-Economic Modeling, Rural Areas, Broadband Networks, Digital Divide, LTE Broadband
