helios towers

Outdoor Distributed Antenna System (oDAS)

Tanzania case study

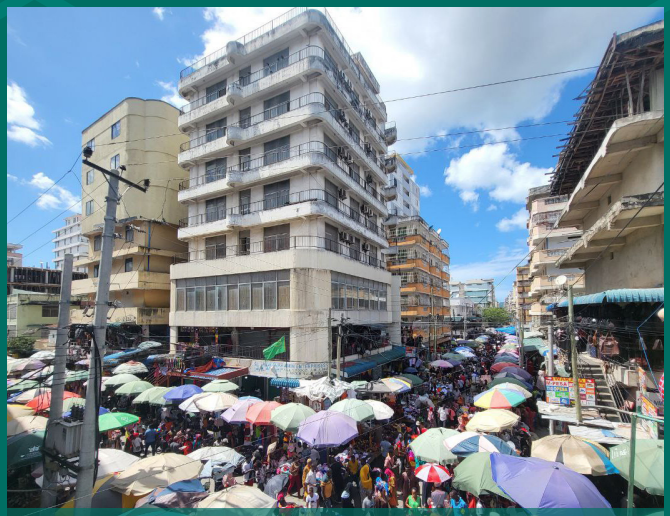

Figure 1 Kariakoo market, a densely populated trading area in Dar es Salaam, Tanzania.

Operators in Tanzania were experiencing a coverage and capacity issue in a busy market area. The market was in between buildings and composed of a ground floor and a basement floor. Helios Towers (HT) was tasked to deploy a multi-operator, multi-technology solution.

HT worked together with our MNO partners to determine the exact technology requirements for day-1 installation. We identified the closest macro site that would be used as the donor site of the existing telecoms tower, where operators would expand their active equipment to feed into the outdoor DAS. Three operators were considered in the initial design as well as 2G, 3G and 4G spectrum bands. Capacity was also agreed with the operators and number of sectors determined.

HT delivered a full turnkey solution, meaning all services from site acquisition through to operations and maintenance. The existing telecoms tower was upgraded with the required civil works to accommodate the distributed DAS as well as the MNO's expanded active solution. HT also engaged with municipalities to secure the locations at the market where we would need to deploy equipment with a very small footprint on the walkway, because of the dense foot traffic. A fibre cable was deployed from the existing telecoms tower to the lampposts that were deployed on either side of the market. An indoor sector was planned for basement coverage improvement.

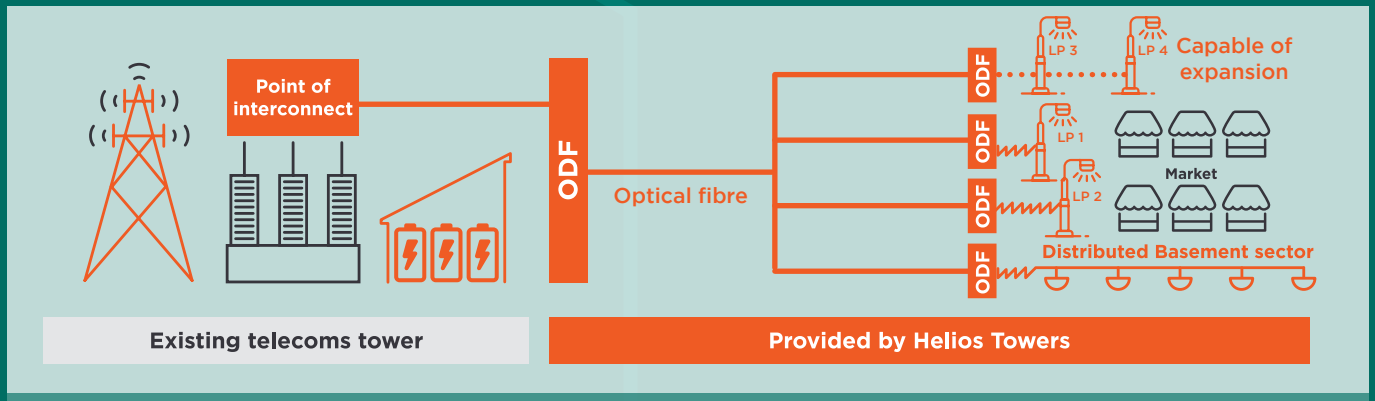

Figure 2 Basic architecture of the system

Lampposts were used at the market and this supported the municipalities' initiative of increasing the lighting in the area, with HT deploying an LED lamp at each of the sites. HT provided both a grid connection at the lamppost together with a battery back-up system. All equipment was installed on the lamppost to maintain a small footprint on the ground. The solution was able to improve the coverage and capacity in the affected area and seamlessly interact with the surrounding macro sites. The system is also capable of being expanded with more lampposts or additional frequency bands added.

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