Fibre to the Home Council Middle East & North Africa

Enhancing Life

Case study

Digital Oman makes big steps in FTTH

Sultanate on track to ubiquitous urban coverage

Oman is working on a full fibre-optic access network to deliver FTTH services. A national core backbone network developed by Oman Broadband Company is to provide connectivity between metropolitan locations and across the nation. The network, primarily based on passive infrastructure, mixes fibre owned by Oman Broadband with fibre owned by other utility vendors.

30% of Oman's urban areas are to be covered by 2020 and 95% by 2030. To date, all is going according to plan and over 10,000 km of fibre has been rolled out. The network will soon pass 200,000 homes, covering all major population centres in Muscat, and will be extended to Saada in the Dhofar Region and Musannah in the Batinah region. Total active lines at the end of 2017 will be around 40,000.

Pent-up demand

Oman Broadband is offering telecommunication service providers equal and open access on a wholesale basis, while enabling end-users to efficiently leverage high-speed fibre connectivity. To optimize costs and minimize disruption, the company aims to grow the network through infrastructure sharing, for which it has entered into agreements with water, electric and gas utilities to share trenching, ducts and, in some cases, existing fibre.

"Access to a reliable high-speed network is vital to social and economic development and providing fibre infrastructure is intrinsic to our country's 'Digital Oman' vision," explains Bader Al Zeidi, General Manager Network Planning & Technology, Oman Broadband. "With this in mind, we have set ourselves specific rollout targets as part of the National Broadband Strategy. The pent-up demand

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Bader Al Zeidi, General Manager Network Planning & Technology, Oman Broadband Company

for high-speed connectivity in Oman is almost universal. There is a huge demand in our market for fast broadband as end-users clearly understand the advantages of fibre over other technologies. Previous deployments of technologies such as xDSL and WiMax solutions have not been successful. As a result, end-users are very keen to get real broadband service, which led to a 20% sign-up rate within our first year."

Smart processes

So far, the entire deployment is an underground ducted network. Building a physical network in a mountainous nation like Oman poses significant challenges. Overhead drops are not authorized in metropolitan and many rural areas. Rollout has required extensive civil works, requiring cooperation of local municipalities to obtain the necessary permissions. Most of the older copper infrastructure was buried, and the absence of reusable duct increased the average cost per home passed. "Fortunately, we have found a reliable partner and created efficient processes that will enable us to reach our goals. To avoid cable cutting incidents, for example, we are installing an active fibre monitoring system based on OTDR, linked to our GIS system, so that we can proactively monitor and repair cables."

Broadband benefits

Back in 2015, Oman was one of the most expensive countries in the region, in terms of broadband pricing. Access was low. Since then, retail broadband prices have dropped 30% whilst quality and speed have increased tremendously.

Homes Passed (and % of total homes)

	Jul 17 Actual	Dec 17 Forecast
Homes Passed	145,000	200,000
Penetration	21%	28%

Number of subscribers (and % of total homes)

	Jul 17 Actual	Dec 17 Forecast
Connections	26,568	38,000
Take up rate	18%	19%
% homes	4%	6%

"The current rapid developments are changing how business is conducted in Oman and opportunities for those who thoroughly embrace the potential are tremendous," adds Bader Al Zeidi. "Broadband contributes to economic growth through a series of effects similar to those generated by the deployment of any type of new infrastructure. Beyond these effects, broadband, as a general-purpose technology, generates externalities, ranging from GDP growth to job creation and enhancement of consumer surplus."

"FTTH Broadband networks also provide a more efficient and less expensive way to deliver essential public services such as health care, education, public safety and emergency services. Even if we are conservative in assuming the impact of broadband penetration to GDP growth, Oman will surely see great benefits."

ABOUT OBC

Oman Broadband Company, founded in 2014, is wholly owned by the Government of the Sultanate of Oman, and is a key milestone in the Cabinet-approved National Broadband Strategy.

The company is deploying a robust nationwide network with its own infrastructure together with previously installed infrastructure from various state-owned entities, working to deliver maximum national coverage in line with the Digital Oman strategy, e-Government Services and Oman Vision 2040.

Looking ahead

Rollout is progressing as planned and Oman Broadband are maintaining the momentum required to reach their 2020 goals. The network is being expanded across Muscat but also into new metropolitan areas in other locations to provide nationwide connectivity.

New, cost-effective techniques for rolling out broadband in remote rural areas are being developed. New products, which add value to the current wholesale service, are to be introduced, including point-to-point and premium services.

"Oman is strategically positioned to host a number of services not only for the region but even further," Bader Al Zeidi concludes. "Our political and economic stability provides a much needed safe haven for such business, and the infrastructure we are building only adds value to that proposition."

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Investment model

No public subsidies were used, all equity in the first two years is provided by the Ministry of Finance, with subsequent financing to be raised through debt from international markets.

The two-year grace period allowed the company to prove the financial viability of its project, while early stage growth showed significant upside for potential equity financing.

A strong Business Plan and solid performance to date successfully attracted local and international banks. The project is split into two phases, in parallel with the deployment phases.

Phase I was fully bankable with no major deviation required.

Phase II is to be re-assessed at a later stage, according to operational results, market situation as well as equity and the debt market situation.

Deployment period

2015 to 2021

Time to ROI

Project breaks even in 2021. EBITDA break-even position is expected within two years and a free cashflow break-even position within five years.

Services offered to end-customers

Mainly FTTH connections for consumer broadband Internet access, point-to-point and point-to-multipoint connectivity and long-haul for business customers.

Tech talk

Specific technical features of the network include a full fibre-optic monitoring system using OTDR and the ability to deliver simultaneous service to three separate service providers, each with their own GPON technology. The passive fibre infrastructure supports GPON technology, while PON type topology including a 2:32 way split ratio to protect the feeder network is employed.