

## Mohammed Al-Mannai, CEO of Qnbn, on Qatar's national open-access broadband fibre network

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**Qatar has awarded Ericsson the first construction contract for its new national broadband network, which is due to deliver fibre direct to 95% of homes by the end of 2015. Qnbn's CEO Mohammed Al-Mannai tells Alan Burkitt-Gray how this project is part of a plan to turn Qatar into a knowledge-based economy**

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Mohammed Al-Mannai: We're building an entirely passive infrastructure that will be leased by commercial operators. They will pick the active elements

The small Gulf state of Qatar is set to be the next country in the world to build a carrier-neutral open-access national broadband network.

Australia and Singapore have taken the lead, New Zealand was next, but Qatar is determined to be fourth, as part of the government's plan to create a knowledge-based economy that is strong in IT and other modern technologies.

"The government sees infrastructure as one of the main elements to this project," says Mohammed Al-Mannai, CEO of Qnbn, the 100% government-owned Qatar National Broadband Network company.

"We're building an entirely passive infrastructure that will be leased by commercial operators. They will pick the active elements."

The idea is that each home and business in the state will be connected using three dark fibres — so that residents and businesspeople can choose up to three independent suppliers.

The idea is "open access, equal access, rapid deployment and cost effectiveness", he says, "avoiding duplication and charging affordable prices at the wholesale level". Qatar want to see more companies compete to offer broadband services to the state's residents and businesses.

Qatar is already one of the region's most highly connected countries, with 83% of the population connected to at least 256 kilobit broadband.

Qbn has awarded the first of three infrastructure contracts to start building the network. Ericsson was named as the first supplier in mid-October 2012. Two more contracts are in negotiation, says Al-Mannai.

#### Government's 2030 vision

The new broadband network will deliver more than 100 megabits a second to each home. The project is supporting the state's "2030 vision", he says, which has a number of initiatives to develop Qatar as a knowledge hub, with a population carrying out development in the IT industry and related businesses. Already a number of large companies have set up R&D centres in Qatar, he says.

Qatar has decided to take a different approach to funding a national broadband network to Australia and Singapore, though all three are using a similar open-access strategy in order to encourage all operators to use it to deliver high-quality broadband services.

Australia's NBNCo is a state-owned company which is building a publicly funded \$36 billion network to reach every home in the land — most by fibre, some by broadband wireless and a few by satellite. But NBNCo has also taken over existing operators' copper infrastructure and will replace it with fibre.

Singapore has authorised two commercial companies to take part in its national broadband network: one is building the infrastructure and one is operating the services, which are wholesaled to rival operators. Both companies are owned by existing operators, but are run as functionally separate units.

"We studied different models around the world, including Australia and Singapore," says Al-Mannai. Qatar also looked at the Malaysian model, where the government gave money to the incumbent to build an extensive fibre-to-the-home system, though run on a different commercial basis, and "we also looked at what's happening in the European Union, including what's happening in BT".

The Openreach model — where BT put its local loop business into a functionally separate division to which all rival operators have equal access — was also of interest. Telecom New Zealand took a similar approach, though more recently has moved further by splitting its local loop unit, Chorus, into an entirely separate company; both New Zealand companies are owned by shareholders, as is all of BT.

#### Public-private partnership

"We decided to have a public-private partnership which owns only infrastructure," says Al-Mannai, "and offers only wholesale services on passive infrastructure. Qbn is not competing with any of the commercial operators. We developed the business case and the government has backed it."

The company was formally registered in March 2011. At the moment the government owns 100% of the equity, though that may change in time.

It is the first such initiative in the region, he says, though he is aware of studies that are still going on — or, in one case, has been abandoned — in the region. One company is looking at the Openreach model, he says.

Early on Qbn commissioned Telcordia — now part of Ericsson, but then independent — to develop the technical code which sets out the way the company works with its partners.

"We have tested the code in a real installation of 6,000 homes," he says. "We wanted to make sure that the approach works and that we provide what our customers are expecting." Customers in this sense are the operators that will be using the fibre to reach their own end-users. "We won't be dealing with the consumers," Al-Mannai emphasises.

The company picked Telcordia because "it is among the best in the world", he says. "They helped us write a very detailed specification."

Qbn "was a new company" without a history of project management, so it was sensible to invite a company such as Telcordia to develop "a very detailed specification".

Having received that, Qbn invited tenders from "seven big vendors", though he would not name them all, except for Ericsson,

whose contract was announced on October 17 during the International Telecommunication Union's conference in nearby Dubai.

Neither Qbn nor Ericsson put a value on the contract. Ray Hassan, Ericsson's president for the Gulf countries, commented at the time: "Having high speed broadband access with faster connectivity has become a major component for today's networked society. We are excited to work with Qbn in Qatar to help turn the networked society vision further into reality."

The other two vendors will be announced "in December or January", says Al-Mannai, a telecommunications engineer who worked for the incumbent operator Qtel for more than 13 years until he joined Qbn earlier in 2012. He is on the board of Al Jazeera Television, the Qatar-based international television news channel.

#### Qtel duct-sharing contract

Qbn has a good relationship with Qtel, whose shares are quoted on a number of stock exchanges. It has signed a long-term lease to give access to its ducts. Both Qtel and Vodafone, its main competitor, have announced their own fibre plans (see links at end) but — though Al-Mannai did not say so — it would seem logical that they eventually come together into the Qbn project.

The company is also talking about using electricity ducts and is negotiating with building companies about creating duct access during construction projects. "When you have a project that will house 20,000-30,000 people the developer will include the infrastructure." The first such deal is with Barwa Real Estate, a group of companies that manages assets worth about \$17 billion.

Qtel has completed work on those first 6,000 connections, and Vodafone Qatar has become the first customer, with an order in early October to connect a number of its customers. "There are 21 customers already connected," says Al-Mannai.

"What we provide is a fibre termination box", that Qbn installs in the end-customer's home. "This gives customers the opportunity to connect three operators, all over the passive layer." Singapore also provides the ability to connect to more than one operator, "but all that is done over the active layer", he notes.

"It means that a customer can connect a different provider for each service. It also gives you protection." That's important "when all your applications are cloud-based", he adds.

The three fibres connect directly to Qbn's central office, "where we are hosting facilities for the operators, and we also have backhaul from the central office to data centres".

The company uses GPON — gigabit-capable passive optical network — technology to connect residences and small businesses, and point-to-point fibre for enterprises and mobile backhaul. "The future of wireless in wireline," he says, emphasising the point that fast 4G wireless services need high-speed fibre backhaul.

This approach has been taken "because we are trying to make life easy for the industry", says Al-Mannai. "The infrastructure accounts for 60-70% of broadband capital expenditure. By building this infrastructure anybody can come and compete, with a very light investment in active components. This will help the government introduce more and more competition into the wireline business."

#### Aggressive roll-out

The building plan is "aggressive", he says. "We want to connect 95% of residences by 2015. That's in the urban areas. The other 5% are areas we can't easily reach by fibre." Outside the urban areas, Qbn will most likely use 3G and 4G mobile, though satellite may play a part.

Qatar is small, with only 1.8 million or so people in a peninsula that is only 11.5 square kilometres in area: but the country's technology growth plans see the population rise to 2.8 million over the next 10 years — it has already doubled in the past eight years, thanks to an influx of hundreds of thousands of foreign workers.

Oil and gas, the main industries, are still an important source of employment and the government hopes that its plans for a knowledge-based economy will provide further growth. A number of foreign universities, for example, have set up campuses in the Qatar Science and Technology Park — where Microsoft, GE, EADS and other companies have centres.

With such a rapid growth being planned for the country, there will be more than maintenance for Qbn to look after once the main network is complete in 2015. One of the big challenges after 2015 comes from Fifa's decision to award the football World Cup to Qatar in 2022. "We will need to equip all venues and facilities in time. That will be our main driver."

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