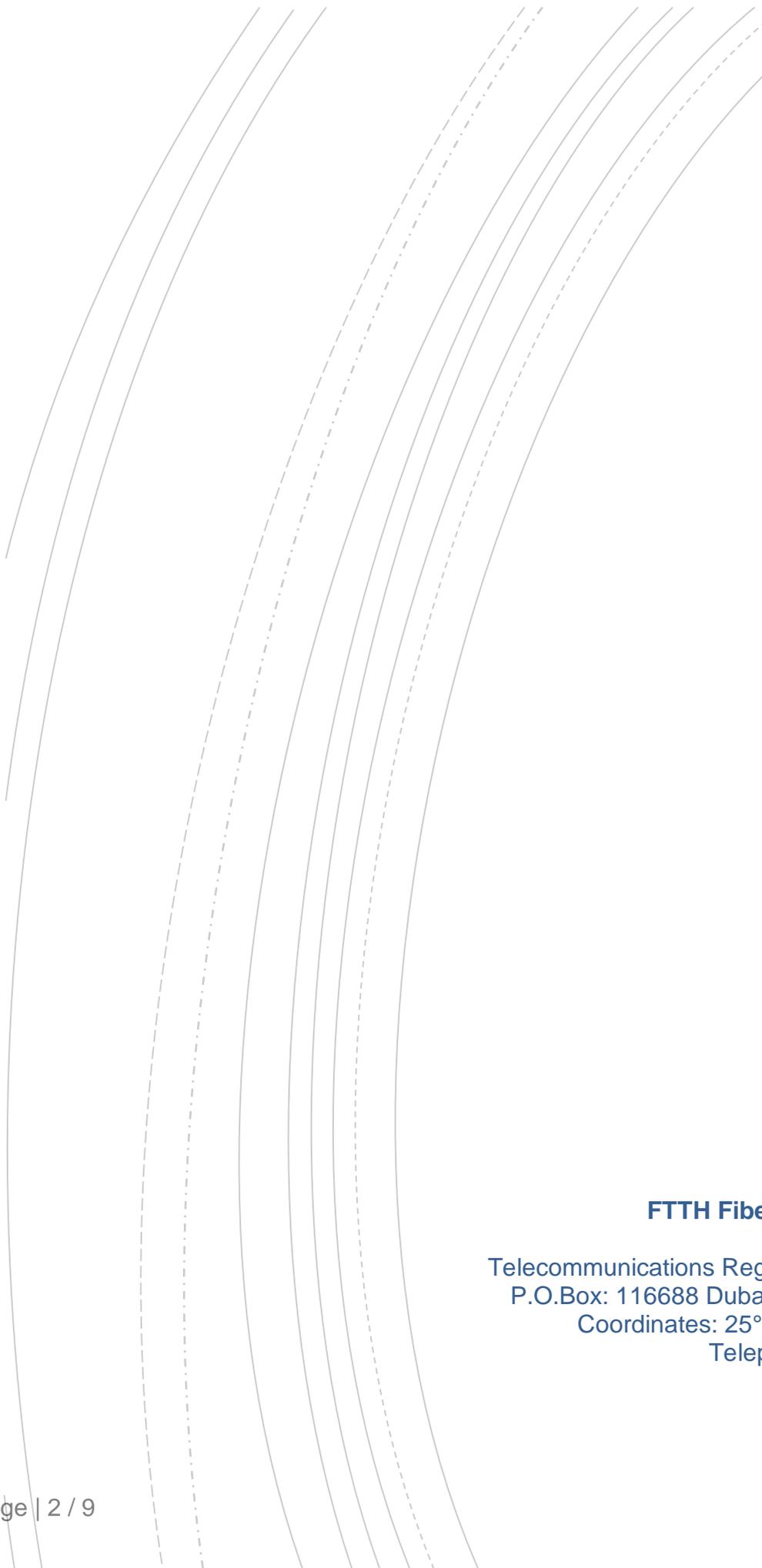


FTTH Fiber technology to home, leaving no one behind, Broadband internet access to all.



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**FTTH Fiber technology to home**

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### Context and Background

Fiber-to-the-home (FTTH) broadband connections refer to fiber optic cable connections for individual residences. They can deliver a multitude of digital information, such as telephone, video, data, et cetera and this is done more efficiently than traditional copper coaxial cable for about the same price. FTTH premises need both active and passive optical networks to function.

One of the benefits to FTTH is that it provides for far faster connection speeds and greater carrying capacity than twisted pair, DSL or coaxial cable. A single copper pair conductor can carry six phone calls, compared to one fiber strand that can carry more than 2.5 million phone calls simultaneously. This provides an enormous capacity for homes that have fiber. The amount of information that can be transferred downloading and uploading in homes is multiplied by a wide margin.

Experts at the [FTTH Council](#) say fiber-to-the-home connections are the only technology with enough bandwidth to handle projected consumer demands during the next decade reliably and cost-effectively.

Fiber handles the current Internet needs that most homes in developed countries are using such as 3D holographic high definition television and interactive games. FTTH can handle 30-gigabyte-per-second needs of such equipment.

In the United States, for example, FTTH broadband connections provide consumers with the opportunity to "bundle" their communications services. They pay for only what they want, and the consumer could receive telephone, video, audio, television and Internet or just about any other kind of digital data stream using a simple fiber broadband connection. This also allows the consumer to receive lower cost, because it forces the companies that deliver fiber to compete and provide the consumer with what the consumer wants and not necessarily what the company wants to offer.

### Need

In line with the UN Agenda 2030 motto of “leave no one behind”, the need to ensure Internet access to all and have a robust telecommunication infrastructure is critical to the development of the digital economy.

### Idea

To find a cost-effective way of bringing fiber to the home to as many people in the UAE as possible and develop a marketing plan that will entice users to select fiber.

### Projects

According to the World Bank, broadband internet is today seen as critical to the transition to knowledge-intensive economies across the world. Countries in the Middle East and North Africa are accelerating their fiber broadband programs, believing the technology will prove transformational to remake or build their economies in a digital world. As many first world countries’ telecommunications networks are captive to large, for-profit corporate interests that have dragged out broadband expansion to protect profits, the developing world has a chance to leapfrog over countries in North America and Europe and launch new connected technology centers for the digital economy.

### Story

UAE’s Fiber to the Home (FTTH)

FTTH has been proven to be the shining star of the NGA (Next Generation Access) family, providing an excellent platform for high or ultra-high-speed access technologies. Not only do fixed access networks benefit from FTTH solutions, but advanced wireless networks do as well, especially regarding increased backbone capacity. The people of the UAE have benefited from both FTTH and wireless networks that provide broadband Internet access to homes and communities. UAE was ranked in the top two globally in the UN e-Government Survey Report’s infrastructure index.

Experts at the FTTH Council state that FTTH connections are the only technology with enough bandwidth to reliably and cost-effectively handle projected consumer demands in the

## **FTTH Fiber technology to home**

coming next decade. The technology is affordable, as demonstrated globally by who are getting into this business sector in anticipation of future consumer demands.

Fiber has a virtually unlimited bandwidth coupled with a long reach, making it "future safe," or a standard medium that will be in place for a long time to come [source: ICT Regulation Toolkit]. Also, the costs of these FTTH will be far less than present technologies, according to the FTTH Council, cable companies spent about \$84 billion to wire households a decade ago. However, it will cost even less in today's terms to wire the same number of houses.

FTTH will be able to handle even the futuristic Internet of things that some experts foresee coming, technologies such as 3D holographic high definition television. FTTH will be able to handle the estimated 30-gigabyte-per-second needs of such equipment which current technologies don't even the capacities to do.

The FTTH broadband connection will spark the innovation of a range of new products that have not even been thought of given the increased data transmission rate. Using the past as a guide, think what items that now seem commonplace were not even on the drawing board 5 or 10 years ago. Experts at the FTTH Council state that FTTH broadband connections will inspire new products and services and could open entire new sectors in the business world.

FTTH broadband connections also will allow consumers to "bundle" their communications services. For instance, a consumer could receive telephone, video, audio, television, and just about any other kind of digital data stream using a simple FTTH broadband connection. Such an arrangement would be more cost-effective and more straightforward than receiving those services via different lines.

Using FITH will pave the way to achieve sustainable development goals by creating a stronger infrastructure, sustainable cities, and better global partnerships.

## **Broadband internet access to all**

In line with UAE Vision 2021, WiFi UAE is a country-wide initiative to provide WiFi access to the public. With WiFi UAE, all people can enjoy high-speed access to all UAE government online services. WiFi UAE is available to all users with a WiFi-enabled device, including

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smartphones, laptops, and tablets. All users can connect to the internet, access government at high speed, checking emails, using social media platforms and using text-based chat application. The objective of FTTH and WiFi UAE is to make sure all the residents and citizens are using high-speed internet, leaving no one behind.

Etisalat of the United Arab Emirates (UAE) says it is expecting to invest AED4 billion (USD1.09 billion) in 2019 upgrading its infrastructure as it looks to expand 5G services, which were launched last month. Dr. Ahmed bin Ali, Senior Vice President of Corporate Communication at Etisalat, told the Emirates News Agency WAM: 'The upgrade will cover the company's mobile phone and fiber-optic networks, along with infrastructure development as well as Etisalat's 5G network.' Etisalat plans to have 600 5G base stations in service by the end of this year.<sup>2</sup>

Meanwhile, rival UAE telco Du says its 5G investment will reach AED1.5 billion this year. Du, which launched its first 5G-capable handset earlier this month, has 120 5G towers in operation now, with 700 planned by year-end.<sup>3</sup>

The race to implementing 5G is critical to all developed countries, due to the speed on new and innovative technology that is being developed. Consumers are requesting faster and faster platforms and countries are striving to achieve this.

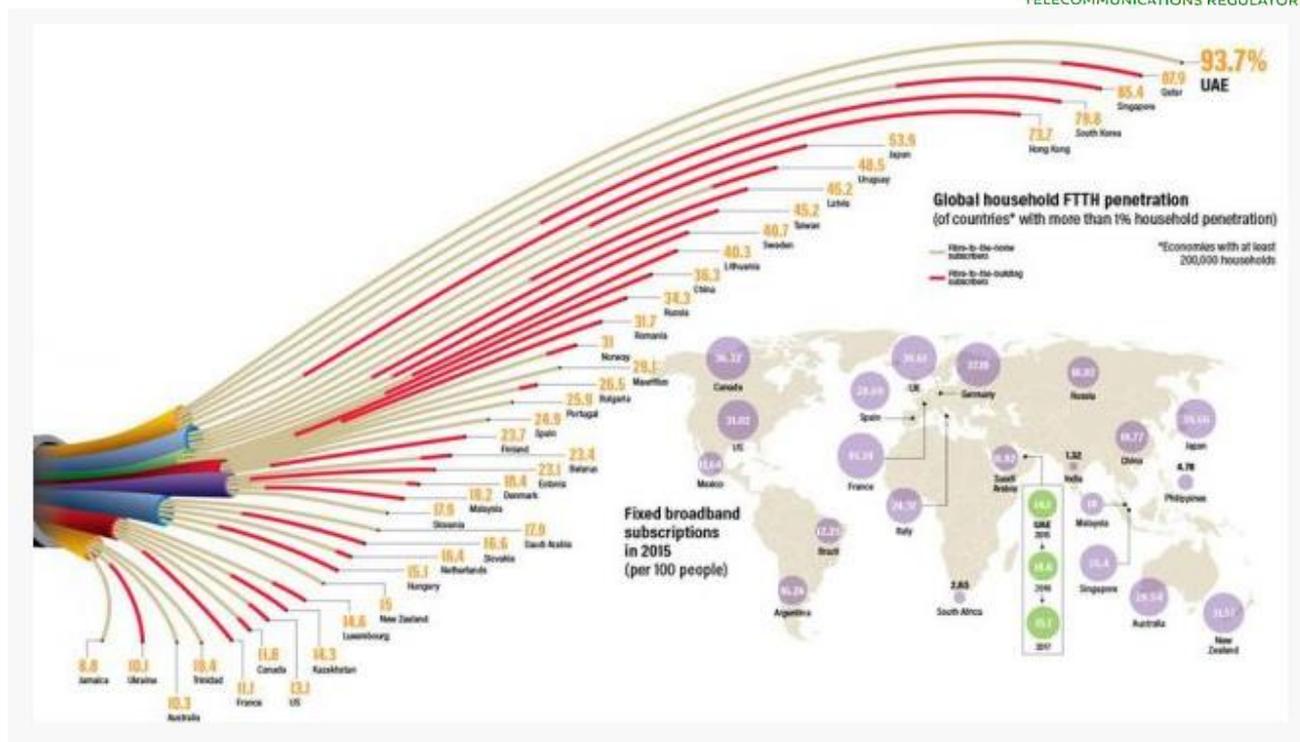
## UAE – FTTH Impact

The UAE was ranked first globally for having the highest FTTH penetration. According to the report by the FTTH Council, the UAE has coverage of 94.3 percent compared to countries such as Singapore (90.3 percent), South Korea (81.6 percent), Hong Kong (75.6 percent) and Japan (69.1 percent)

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<sup>2</sup> <https://www.telegeography.com/products/commsupdate/articles/2019/06/21/uae-telcos-increasing-capex-as-they-race-to-deploy-5g-networks/>

<sup>3</sup> <https://www.telegeography.com/products/commsupdate/articles/2019/06/21/uae-telcos-increasing-capex-as-they-race-to-deploy-5g-networks/>



This achievement highlights the UAEs leadership globally in FTTH penetration, setting a benchmark in the global telecom industry and was largely due to the continuous support and vision of the leadership of UAE in the development and modernization of the infrastructure. Etisalat aims to increase the quality of our FTTH network further, focusing on reliability, scalability, and flexibility. The UAE is well-prepared for FITH connections, and according to a study published by the World Economic Forum, the UAE is ranked first in the Arab region in terms of the readiness of its telecommunications networks.

The world of work is changing rapidly and becoming increasingly digital. More and more knowledge workers are relying on fast connections to the information stored in the cloud to do the jobs. Installing superfast FTTH now is an investment in equipping communities with the infrastructure they need not just to survive, but to thrive in the future. Also, superfast FITH provides local businesses with the ability to expand, invest and seek new opportunities by providing rapid connections to major markets. The people of the UAE have benefitted through the investment in robust telecommunication infrastructure. FITH has created the following telecommunication environment:

- Better-quality transmission
- No interference from lightning strikes short circuits, crosstalk, electromagnetic or radio signal interference

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- No interference from high voltages in fluorescent lights, card-access door strikes or outdoor lighting systems
- Better-quality transmission
- Lightweight
- Stable within a wide temperature range
- Long service life • Secure—not easily tapped into or interfered
- Extremely high bandwidth (for CCTV and sound)
- All these advantages will take the UAE to the next level.

The Telecommunications Regulatory Authority (TRA) has issued 5G wireless spectrum Etisalat and Du. UAE's 5G spectrum is now open business.

Etisalat has deployed the first 5G network in Abu Dhabi's new Midfield Terminal Building. Passengers can now enjoy high-speed Internet services free of charge at Midfield.

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