

5G NETWORK TECHNOLOGIES

MAGAZINE SUBJECTS

- Application of 5G in Smart Campus
- Emerging Technology on Network Infrastructure" (CommScope Malaysia)
- 5G, Wifi6 and Emerging Network Technologies (HUAWEI)

picture resources

<https://luxnnia.com/en/portfolio-items/que-es-iot-internet-of-things-o-el-internet-de-las-cosas/>

https://www.cisco.com/c/m/en_us/solutions/enterprise-networks/802-11ax-solution/nb-06-5-things-WiFi6-5G-infograph-cte-en.html

<https://cmte.ieee.org/futuredirections/2019/11/08/wifi-6-is-rolling/>

<https://honorscollege.uark.edu/academics/honors-college-seminars/forums/forum-smart-campus.php>

<https://www.rosenbergerap.com/newsDetail.html?id=84>

<https://www.kioskmarketplace.com/blogs/the-pros-and-cons-of-5g/>

<https://blogs.cisco.com/networking/the-5-technologies-that-will-change-networking-in-2019>

<https://www.google.com/imgres?imgurl=https://www.investors.com/wp-content/uploads/2019/01/stock-5G-01-shutter.jpg&imgrefurl=https://www.investors.com/news/technology/5g-stocks-5g-wireless-stocks/&tbnid=GDDSFruC1TYfKM&vet=1&docid=tYuHwQsiMrIk8M&w=1000&h=563&itg=1&source=sh/x/im>

<https://www.insidetelecom.com/huawei-has-lost-the-romanian-5g-market/>

<https://community.fs.com/blog/wifi-6-vs-5g.html>

group members

GAFFAR

Matric No.: A21MJ4002

FARZAD

Matric No.: A21MJ0138

LOAI

Matric No.: A21MJ4003

MERVIN

Matric No.: A21MJ5015

Table of Contents

1



2



3



As the COVID-19 epidemic spread over the world, causing governments to impose tight lockdowns, people became more reliant on the internet for employment, school, communication, and pleasure. This resulted in a significant increase in Internet traffic, raising worries about our network infrastructure's ability to handle it.

According to the Speedtest Global Index, Internet speed has already recovered to pre-COVID-19 levels in most countries, and Internet traffic is expected to increase even more in 2021 as businesses and consumers grow increasingly network-dependent.

1

Application of 5G in Smart Campus

2

Emerging Technology on Network Infrastructure

3

5G, Wifi6 and Emerging Network Technologies (HUAWEI)

In this Magazine, we will explore;

- 1.1 Improved interaction between teachers and learners and collaboration among peers
- 1.2 Accelerated quality and adoption of immersive learning
- 1.3 Education generally follows a one-size-fits-all approach that many say could hamper growth.
- 1.4 Boosted on-the-go learning
- 2.1 Emerging Technology on Network Infrastructure
- 2.2 Technology Trends in Networking
- 3.1 What do you know about Huawei?
- 3.2 What is 5G technology all about?
- 3.3 Let's talk about Wi-Fi 6
- 3.4 What can we conclude...

Improved interaction between teachers and learners and collaboration among peers

When you log into Zoom, there is a considerable likelihood of lagging and network problems, which has an unfavorable influence on instructional delivery. Video conferencing systems will increase in quality and reliability all across the world thanks to 5G. As a result, even in faraway locations, time will be better spent connecting instructors with students. Teachers will save time by not having to deal with connectivity issues or interruptions in audio and video connections, allowing them to focus on the learner. Students will be able to download films and learning materials more quickly, and they will be able to see holograms of guest lecturers in their classrooms without any gaps or delays. Furthermore, because 5G allows for increased data transfer, communication among peers for collaborative projects will be faster and with less latency.

Accelerated quality and adoption of immersive learning

Some abilities, such as lab work and hands-on experiences, require additional noticeable stimulus to achieve the same degree of learning online as in real life. The use of augmented reality and virtual reality in immersive classrooms can help students acquire new skills and dynamically visualize non-representational concepts. Learners will be able to explore complex ideas through zooming, pinching, and even touching thanks to 5G's increased network bandwidth and smooth experience. Furthermore, haptic responses (which simulate the feeling, touch, or motion of engaging directly with a real object) might be used to bring tactile forms of learning into a classroom via traditional video conferencing systems, making interactions more comfortable.

Education generally follows a one-size-fits-all approach that many say could hamper growth.

5G has the potential to alter that! It will boost personalization by developing intelligent algorithms that can recognize each student's individual needs and tailor learning paths for them. Virtual teaching assistants, for example, might provide associates access to alternative sets of lectures and tests according to the learners' profiles and preferences.

Boosted on-the-go learning

As 5G becomes increasingly prevalent in everyday life, it will make learning on the move more convenient, with greater responsiveness and speed across all devices, particularly mobile. Consider the added convenience for students and professionals who want (or need) to study outside of the classroom.



Emerging Technology on Network Infrastructure

As the demand for Ethernet and Wi-Fi has grown exponentially, networking technology has improved dramatically. Local area networks must manage traffic generated by a number of sources, including live streaming video, network-attached storage (NAS), Voice over IP (VoIP), virtualization, cloud, and Internet of Things (IoT) devices and services, in addition to being interoperable with a wide range of devices.



Technology Trends in Networking

• Wi-Fi 6

Wi-Fi 6 infrastructure is ready to go, but producers of Wi-Fi 6 compatible products, such as laptops and smartphones, must accept new standards.

• 5G

5G is an abbreviation for fifth-generation cellular technology. It is distinguished by enhanced speed, lower latency, and greater flexibility in wireless services. 5G would address the issue of several wireless devices connecting at the same time, but IoT exacerbates the problem by decreasing wireless network performance.

• Cloud computing

Cloud computing provides a faster transition to remote work and aids in the more effective arrangement of remote workspaces, which adds to business continuity during a crisis. You can maintain consistent network and security policies across several clouds using multi-cloud policy management.

• IoT

The Internet of Things is all about connecting the disconnected. The majority of things remain unconnected, but IoT devices are getting the capacity to communicate and connect with other equipment and people, which is revolutionizing how we work.

• Data Security

The usability and integrity of a network are critical components of security. Effective network security restricts network access and keeps a variety of threats from infiltrating or spreading throughout the network.



IoT





What do you know about Huawei?

Most of us know that Huawei in the smartphones industry, they produce smartphones like P40, P30 or Honor smartphones. But Huawei is just about smart phones. This company produces electric cars, network services, and also cloud computing services. They have been also famous with starting the new 5G technology and Wi-Fi 6 technology.

What is 5G technology all about?

5G is basically the 5th generation of wireless internet connection. It allows users to be connected to the internet anytime, and anywhere. In addition, the high connectivity speed of 5G is the main advantage of it compared to 4G. Also its coverage is more compared to the Wi-Fi 6 technology. Some countries like Korea, China and USA have already started using 5G. For Malaysia, 5G is expected to be launched by the end of 2021.

Let's talk about Wi-Fi 6

Wi-Fi 6 has started in late 2019, but unfortunately many people are using it without realizing that. Wi-Fi 6 can provide the user with high connectivity speed up to 9.8 Gbps. Routers that support Wi-Fi 6 technology can switch from 2.4 Ghz system to 5 Ghz system automatically. One advantage of 5 Ghz system is that it makes the connection more stable, but the range is low compared to 2.4 Ghz.

What can we conclude...

We need to take advantage of both 5G and Wi-Fi 6 technologies because each one complements the other.

