

CONNECTIVITY

HOW TO CONNECT AND GROW IOT SERVICES GLOBALLY





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IoT SERVICES

INTRODUCTION

THE INTERNET OF THINGS (IOT) IS SET TO CHANGE THE WAY WE INTERACT WITH EACH OTHER, BUSINESS, GOVERNMENT AND SOCIETY. IT IS THE SINGLE MOST REVOLUTIONARY CONCEPT THAT WILL DEFINE HOW PEOPLE WILL THRIVE, HOW RURAL COMMUNITIES WILL GROW, AND HOW THE JOB MARKET WILL SHIFT IN THE COMING YEARS.

[IoT is responsible for the most substantial economic growth in human history to date¹](#), and the IoT global market is set to [reach over US\\$1100 billion by 2026](#) with a phenomenal growth rate of 24.7%. Rural, as well as urban environments, will be forever changed. Smart Cities will become more and more common, integrating traffic, metering, power consumption and more with every year, and Smart Farms are set to cut food prices [nearly in half by 2050²](#).

IoT will transform our professional and private lives. However, businesses that want to stay ahead of the curve and take advantage of this technology must be prepared - and those preparations need to happen now.

This whitepaper has been produced to help businesses get started with IoT. It will cover what IoT means today, and how businesses can prepare for, connect, and grow with IoT services around the world, no matter how remote or centralised their operations are.

Let's begin by gaining a more in-depth understanding of what IoT is and why businesses need to take note.

THE INTERNET OF THINGS

The Internet of Things is quite simply the way the world is going. It describes how objects are starting to become connected, communicating data and relaying orders without requiring human-to-human or even human-to-computer interaction.

IoT means that, because everything is connected, hundreds of decisions and actions can be automated based on the data received from remote devices, and human input can be informed by immediate information gained from sources around the world.

In other words, IoT is the next evolution of interconnected networking through the internet.

WHY IOT IS VITAL FOR BUSINESSES

IoT provides businesses with better insight into and control over the objects and environments that previously were not connected to the internet. With IoT, enterprises can monitor and run operations in extremely remote areas and, more importantly, gain valuable data and insights on remote assets almost instantaneously.

There are countless applications for IoT networks. With uses ranging from the monitoring of power plants and oil and gas pipelines to Smart Cities, farming operations, point-of-sale locations, and the latest security solutions, IoT will play an integral part of everyday management and services.

¹ Disruptive Asia 2019

² Fortune Business Insights 2019

EXTENDING IoT NETWORKS INTRODUCTION



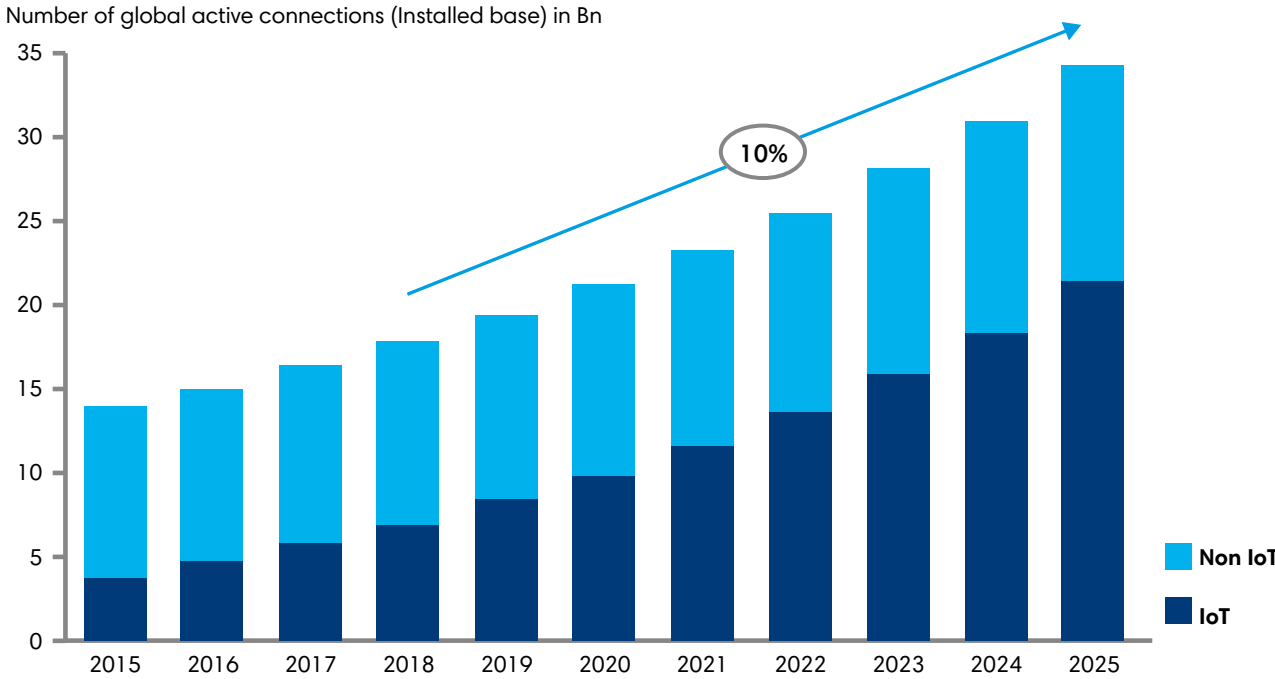
With more data from more sources and faster data processing, the business opportunities enabled by IoT are limitless. Consequently, the number of connected assets is forecast to grow massively, from 8.3 billion in 2019 to 21.5 billion in 2025 (IoT Analytics Research 2018).

For industrial-related IoT, the number of connections worldwide is forecast to grow sevenfold between 2018 and 2028, to over 5 billion connected devices ([Analysis Mason](#)).

IoT and the technologies that enable it are a game-changer for businesses. Global operations can now be managed from a single, off-site location, with hundreds of decisions and actions automated based on the data received from remote devices around the world.

Now that we have established what IoT means in terms of concept and business use, it's time to take a look at some of the challenges and opportunities that businesses face when implementing IoT for their operations.

TOTAL NUMBER OF ACTIVE DEVICE CONNECTIONS WORLDWIDE



Note: Non-IoT includes all mobile phones, tablets, PC's, Laptops, and fixed line phones. IoT includes all consumer and B2B devices connected - see IoT breakdown for further details
Source: IoT Analytics Research 2018



IoT SERVICES

THE CHALLENGES AND OPPORTUNITIES

THE CHALLENGES OF IOT

Through IoT, businesses and people can be more connected to the world around them professionally and socially, enabling them to do more meaningful, higher-level work. However, obtaining reliable access to the internet remains a prominent obstacle, as not everyone has access to a reliable, global IoT service.

Connectivity

The primary challenge of IoT is how businesses are connected around the world.

Many businesses are unable to reach remote assets due to insufficient coverage, or prohibitively expensive solutions. Terrestrial networks only cover 15% of the Earth's surface, albeit 50% of the landmass. While this is acceptable for consumer internet requirements, it's far from sufficient for objects in remote, professional environments. These circumstances have led to a reliance on cellular solutions due to a lack of more effective connectivity technologies for IoT.

With such a diverse range of industries involved, from telecoms to oil and gas, agriculture and banking, assets must be connected on objects even in very remote locations. However, the vast majority of applications do not require high-speed communication and the amount of data exchanged is small, typically ranging from a few, to a few hundred Megabytes per month per asset. Nevertheless, connecting remote assets remains a challenge.

Terrestrial networks – whether wired or wireless – are far from ubiquitous. They are designed to connect people and as such, only cover the more populated areas. But assets can be located anywhere, including rural and environmentally-challenging territories such as mountains, deserts, or at sea, and dispersed across multiple regions. In these situations, where secure, guaranteed, cost-effective connectivity is just as essential, satellite is the only technology capable of delivering reliable connectivity to these assets.

Business Transformation

Another challenge for IoT by virtue of being a new technology is business transformation. [IoT Magazine](#) states that 38% of all IoT business users cite complexity and technical challenges in using IoT. The lack of talent and training currently available is self-evident, with 47% of IoT adopters stating that there simply isn't enough.

Put simply, many employees, companies and even governments do not yet know how to deal with or use IoT to its full potential. Exciting, new capabilities come with new devices, and these devices often require specialised training or infrastructure to be used effectively.

Implementation

Companies today are still unsure of how to use IoT best. Many ideas and proposals come and go, with some being more effective than others.

Implementing IoT in any business environment comes with expenses and risks, and this is hindering the widespread use of the technology. According to [a recent study conducted by Aruba](#), key issues that are preventing IoT adoption relate to operational costs and implementation.

50% of businesses state that the cost of implementing an IoT solution is too high, with 44% claiming that maintaining the solution would be too taxing on their resources. 43% of businesses have major concerns over the integration of IoT with their current and legacy technology.

It seems clear: IoT devices and applications still have a long way to go before operating well with existing solutions.

THE CHALLENGES AND OPPORTUNITIES

THE OPPORTUNITIES FOR IOT

Perhaps one of the most telling indicators of the opportunity that lies within IoT and IoT applications is the amount of interest and investment that it generates.

[Statista says](#) the projected global IoT spending is valued at over 1.1 trillion dollars and has been [steadily growing](#). As stated before, the IoT market has an unbelievable compound annual [growth rate of 24.7%](#), and big-name companies such as Google, Cisco, Microsoft, Dell, Apple, Facebook among others are investing heavily in IoT applications.

Microsoft itself has stated in a [recent report](#) that nearly all businesses will use some form of IoT by the end of next year.

Smart Metering

Accurate, real-time updates on energy consumption, power quality information to businesses, and network management systems is a sector that IoT can drastically change for the better.

Both the utility and the energy consumer benefit from precise information that enables greater control over energy distribution and use. With IoT, home energy management applications to automated demand response systems will help make energy efficiency a reality from distribution to end-use. One example is a data service provider in Europe, supporting the nationwide deployment of smart electricity and gas meters. The meters collect and transmit energy readings, but also need frequent firmware updates to ensure the solution remains fully secure, private, and can deliver additional features over its 15-year lifespan. Over 100,000 homes in the country are out of reach, as their terrestrial coverage is not sufficient. The satellite IoT solution enables both the data to be repatriated and firmware upgrades delivered to the remote devices securely and cost-effectively.

IoT applications will help to forecast consumer demand accurately and provide new insights into consumer behaviour. This will allow utilities to help reduce peak demand and manage the electronic load in real-time, through automation.

Asset Monitoring and Optimisation

The ability to automatically monitor remote operations and receive feedback in real-time has already seen success for some companies. General Electric has been praising the benefits of creating an “Electricity Value Network” which allows for visualisation across the entire electricity grid in real-time, allowing them to optimise and react when necessary from remote locations.

Another great example is a Turkish-based solar power plant operator with production facilities in the Izmir province of western Turkey. They need to provide clients with real-time visibility on electricity production and be alerted to any production or security alerts, as there is no human presence on-site. With many of the sites located in rural areas, where there is limited or no access to terrestrial communications networks, they use a satellite IoT solution giving them the coverage they need while maintaining low operational costs. Telemetry data and alerts are transmitted from the remote sites to the engineers in the capital city, around the clock, giving them a fully informed picture of the power plant’s performance.

The monitoring and optimisation benefits that come with implementing IoT provide more early warnings, and improved efficiency, much faster than non-connected assets operated and monitored by humans alone.

THE CHALLENGES AND OPPORTUNITIES FOR IoT

Smart Farming and Environmental Protection

The vast expanse of lands, the sheer amount of livestock that needs monitoring, and the ever-expanding harvesting statistics make the agriculture industry a prime candidate for a total IoT revolution. Indeed a recent study by Idate forecasts that over 20% of all connected assets will be agriculture-related by 2031.

IoT enables farmers to not only make smarter decisions but to automate many of the processes that make up their day to day work. Water and feed levels can be monitored to optimise distribution; crops can grow better when decisions are based on accurate data on soil conditions; roaming animals can be tracked to minimize the risk of losing them. IoT can also help in environmental protection. In 2017, Eutelsat and the Sigfox Foundation joined forces to protect rhinos through the “Now Rhinos Speak” initiative. A remote tracking solution fitted in the rhino horns sends positioning data to a secure on-line platform via satellite, giving game park wardens updates on the animals’ movements to improve protection against poaching.

Once IoT has gained widespread use, smart farming will become an extremely relevant application field for predominantly agricultural-product exporting countries around the world. It will speed up development in these countries.



Smart Disaster Relief

While IoT applications can unquestionably make our lives easier, they can also end up saving them.

From digitally connected gear with built-in sensors that measure air quality, toxins and motion, to protective clothing that rely on continuous vital signs, IoT has multiple applications for the capacity to save human life, no matter how remote the disaster.

Scientists today use ground movement acceleration sensors to trigger early earthquake warnings by using different shock waves that a tremor emits. The early, small tremors are hardly recognisable to humans, but with the right IoT sensors, scientists can predict the more dangerous tremors that will follow. Using this data, express trains and elevators can be halted, factories can swing the arms of industrial robots into secure positions, and people can be evacuated before a threat materialises. These monitoring stations are not only used for imminent earthquakes, but they can also be applied to structures such as bridges or skyscrapers to monitor their condition and issue an early warning.

The recent Australian wildfire disaster has left many wondering if there was a way to prevent such carnage. IoT may have the answer - Spain has sensors attached to trees to record parameters that change during forest fires, such as temperature, humidity, CO2 and CO. The instant these sensors reach critical levels, they automatically notify the fire service with GPS coordinates.

THE CHALLENGES AND OPPORTUNITIES FOR IoT

Optimised and Automated Production and Logistics

IoT has many applications when it comes to gear that can automatically respond to all the other equipment in a workflow. When applied to a production-oriented environment, companies can reduce waste and streamline their time and resources thanks to equipment and assets, no matter how remote, working together without human input.

This naturally leads to fleet management and logistical improvements – an industry with huge potential for the IoT market as almost 60% of connected IoT objects are forecast to be related to logistics by 2031. With the right tracking tools and IoT devices, logistics managers can track their entire fleet of vehicles in real-time, and let automated systems make smart decisions about routing vehicles, improving productivity and reducing expenditure. Managers can also leverage their data to more efficiently maintain and repair the vehicles in their fleet as well.



IoT CONNECTIVITY

SELECTING YOUR IoT NETWORK

Now that you understand the challenges and opportunities of IoT, it's time to start preparing your business for IoT and evaluate the options available to you. This guide will help you tackle the primary challenge mentioned previously, connectivity, as well as capitalize on the opportunities.

Just as every business is not the same, every IoT solution is not created equally and for the same purpose. Businesses will usually find themselves in very different environments with different needs, so it is vital to understand these needs to help select the best IoT solution for you.

This section of the whitepaper will examine two primary questions when searching for an IoT provider or connectivity solution, namely:

- How to select the right type of connectivity solution?
- How to extend your network beyond its limitations?

Let's begin with connectivity solutions.

HOW TO SELECT THE RIGHT TYPE OF CONNECTIVITY SOLUTION

The very beginning of your business' IoT transformation should start with which connectivity solution is best for you and the unique needs of your business. While IoT is set to change the way we conduct business, it has one major limitation - that of connectivity. After all, IoT is only as powerful as the reliability of your connection or the strength of your signal.

Every IoT connectivity solution can be evaluated based on three main metrics. Let's examine each in more detail before we get into the connectivity options below.

Speed and power

This metric refers to how quickly and reliably an IoT communication or signal can be transferred. This metric is important for some businesses that require large amounts of data to be transmitted quickly and reliably.



Distance

This metric refers to how far the data transmissions can reliably travel. This is especially important for businesses who operate in remote areas or have assets in remote areas that they need to access or monitor. As a general rule, the further a communication has to travel, the slower the connection.

Business Use

Of course, when you take speed, power and distance into consideration, you can usually present a case for the connection's business use. In essence, not all IoT connections are suitable for business, and connections explicitly created for consumers are often not the best candidates for widespread business use due to cost.

Ultimately, understanding the requirements of your business will help you select the right IoT connectivity option, allowing you to provide for your business' needs while maintaining a reliable connection.

Several different types of connectivity solutions are available, all optimised for various purposes.

IoT CONNECTIVITY

SELECTING YOUR IoT NETWORK

PAN CONNECTIVITY OPTIONS

PAN, or personal area network, connectivity options refer to a computer network for interconnecting devices centred on a person's workspace. They are commonly used for data transmission among devices such as computers, smartphones, tablets and personal digital assistants. These devices can communicate with each other via the PAN or access the internet via the master device on which the PAN is centred as a gateway.

Today, PANs are usually represented by WPANs (wireless personal area networks), which act as short-distance wireless network technology such as Bluetooth.

Speed and Power

PANs were designed for close-range sharing of small to medium-sized data. Thus, PANs usually don't offer the kind of power and speed a business can rely on to carry out complex operations.

Distance

At most, the range of WPANs vary from a few centimetres to a few meters, and older PANs rely on devices to be relatively close together to share data and information.

Business Use

The case is difficult for using PANs and WPANs reliably for a business. Their short distance limits their scope of usefulness and their speed and power is impacted as a result of this. PANs and WPANs as an IoT connectivity option are thus limited to the basics of connecting personal devices within the company.

Examples of PANs: Bluetooth, Thread, Zigbee, NFC

LAN CONNECTIVITY OPTIONS

One of the most reliable and long-standing connectivity solutions is LAN connectivity. Standing for Local Area Network, LANs have been used by most companies around the world, and have even gone wireless for greater convenience with the introduction of Wi-Fi.

LANs are typically used to interconnect and provide data and internet access to computers within a limited area such as a residence, school, laboratory, university campus or office.

Speed and Power

As far as the limitations for speed and power allow, LANs as an IoT connectivity option typically deliver. The speed of a LAN within its range can deliver vast quantities of data very quickly and reliably.

Distance

LANs are designed to provide data and communications within a limited area, usually across a few buildings at their maximum effective range. While speed and power are accounted for when discussing LANs as an IoT connectivity solution, they lack the distance often required by businesses with remote, immovable assets. Likewise, LANs are not an adequate solution for highly mobile connectivity requirements such as emergency, maritime and logistics applications.

Business Use

LANs have already proven their business use throughout recent history and continue to be used today. As an IoT connectivity option, LANs are already a good choice for businesses. However, the severe distance limitations of LANs restrict their application for certain industries, and they're not at all effective for the operation of remote assets or for assets that have limited connectivity options to begin with.

Examples of LANs: Wi-Fi, Ethernet, ARCNET



PREPARING FOR IOT A PRACTICAL GUIDE



WAN CONNECTIVITY OPTIONS

Wide Area Networks (WANs) refer to telecommunications networks that extend over a large geographical area for the primary purpose of computer networking, or for our purposes, as an IoT connectivity option.

These networks are often established through leased telecommunication circuits, and many businesses and government entities use WANs to communicate and send data to staff, clients, buyers and suppliers from various locations across the world. In many ways, the internet itself may be considered a WAN.

Speed and Power

With the right infrastructure and support, WANs provide ample speed and power for everyday use, often matching or even exceeding LAN solutions.

Distance

WANs have been designed to perform over long distances, and are quite reliable when fully supported by the right infrastructure - however, therein lies the problem. WANs such as LTE, 3G and 2G require a strong signal in order to optimally perform. Without a strong signal, communications and data sharing is not reliable in a professional environment.

This is not a problem for areas that have sufficient coverage, however, businesses with remote assets often need an IoT connectivity option to operate out of areas that do not have the infrastructure required to support WAN access.

Business Use

WANs are a solid option as a professional IoT connectivity option. The power and speed of a WAN has historically offered businesses, education institutes and government entities the access they need to operate efficiently. The only downfall for WANs is that they require a strong infrastructure and signal to operate reliably, something that many remote businesses do not have the luxury of enjoying.

Examples of WANs: LTE-M, 3G, 2G, 3GPP Cellular



PREPARING FOR IOT A PRACTICAL GUIDE



LPWAN CONNECTIVITY OPTIONS

Low-power WAN (LPWAN) networks are designed to allow long-range communications between objects that only require a low-bitrate, such as sensors operated on a battery. The hallmarks of an LPWAN solution are low power, long range and low cost. They are a wireless wide area network technology that sends low-bandwidth information through battery-powered devices over long ranges, and are complementary to new WAN 3GPP networks as they consume less energy.

Speed and Power

While LPWANs are optimised to run with low cost and over an extreme distance, they leave a lot to be desired when it comes to speed and power. The typical LPWAN data rate ranges from 0.3 kbit/s to 50 kbit/s per channel, which is often not viable as an IoT connectivity option for many assets that handle complicated tasks.

Distance

The distance of an LPWAN is where it really shines. The operating range of LPWAN technology varies from a few kilometres in urban areas to over 10 km in rural settings. It can also enable effective data communication in previously infeasible indoor and underground locations.

Business Use

LPWANs are effective as a professional IoT connectivity option for businesses that require minimal, low bit-rate communications with their assets. The range of an LPWAN makes it effective for assets that only need low-data transmissions such as battery-operated sensors. This makes LPWANs a viable choice when other networks simply cannot reach. However, it is still not a reliable IoT connectivity option for businesses that require more than 50 kbit/s per channel.

Examples of LPWANs: LoRA, Sigfox, NB-IoT



PREPARING FOR IOT A PRACTICAL GUIDE



SATELLITE CONNECTIVITY OPTIONS

Until fairly recently, satellite connectivity options for IoT were not the most reliable or effective solutions available. The costs involved caused many businesses and consumers to lose confidence in the solution.

However, the ability of satellite connectivity solutions to reach areas that are simply unreachable by any other method has remained, while technology has improved the signal quality and cost of the solution.

Speed and Power

In the past, IoT connectivity via satellite would suffer from things such as poor reception or weather patterns. Today, with solutions made explicitly for IoT such as Eutelsat's IoT FIRST, these problems are no longer as much a threat as they used to be.

While not as fast as fibre solutions such as LAN or WAN, the speed and performance of satellite connectivity solutions for IoT is more than acceptable for remote business operations, from simple to more complex applications - unlike LPWAN solutions.

Distance

When it comes to distance and global coverage, satellite connectivity solutions are quite simply the best in the field. There are very few locations where satellite does not cover, and the launching of new types of satellite constellations has only widened the coverage and strengthened the connection.

Business Use

Satellite solutions such as IoT FIRST are the first of many to follow, and are offered at an affordable subscription rate. The vast amount of coverage combined with the speed and bandwidth available to customers makes satellite the ideal choice when considering remote business operations, and a reliable option when used as a backup for the other solutions.

Satellite solutions for IoT cover the disadvantages of cellular and other terrestrial connectivity solutions, and improve upon many other aspects. It is more reliable, cost-effective and robust - which is what enterprises today need in order to capitalise on IoT.

Examples of Satellite IoT Solutions

Eutelsat IoT FIRST is the first of its kind to focus specifically on IoT for remote businesses. As such, it is the only reliable choice for businesses to invest in for their remote assets.

IoT FIRST is a simple, integrated satellite IoT solution delivering two-way IP connectivity between remote assets and the cloud. Designed to meet specific IoT technical & business requirements, terminals have low power consumption with advanced power-saving modes and operate with small, inexpensive antenna.

New satellite solutions launching soon include a new solution for mobile assets. Enabling IoT connectivity with antennas from just 25cm, IoT MOVE is a simple, managed, IP connectivity solution for markets such as logistics, automotive, maritime, and construction. Its slim, flat antenna can easily be installed on vehicles, making it ideal for tracking vehicle movements.



PREPARING FOR IOT A PRACTICAL GUIDE



HOW TO EXTEND IoT NETWORKS

Combining satellite technology with terrestrial IoT will be the key that professionals need to ensure connectivity to their assets, no matter where they are.

Most businesses already have IoT assets that use cellular to connect to each other and send information regularly. These assets usually rely on cellular due to their remote nature and limited access to other connectivity options.

Satellite for IoT or cellular for IoT need not be a binary choice - both can work together to connect your remote assets and extend your reach. Satellites have unique advantages to connect IoT assets, offering truly ubiquitous coverage which can reach objects with limited or no access to terrestrial networks. It is highly reliable with guaranteed SLA's and delivers a consistent service across the coverage.

LEO SATELLITES AND LPWA

With the expansion of IoT in such diverse sectors, business-critical information from tens of millions of objects will need to be sent from areas not served by terrestrial networks, and from across multiple territories.

As the majority of IoT applications require long-range, low bit-rate and low power consumption, a new type of non-cellular protocol, LPWA (Low-Power Wide-Area) networks, has emerged - with Sigfox and Lora® the most popular. Despite their rapid adoption over the past decade, they still face challenges due to fragmented regulations and a lack of global connectivity.

In 2021, a global hybrid connectivity service called ELO will also be launched. Designed and optimised for LPWA IoT networks, ELO will seamlessly integrate with terrestrial networks. Unlike legacy MSS solutions, which use proprietary technologies, or new space systems which must build new ecosystems from scratch, ELO can be fully integrated with key terrestrial players and existing distribution channels, making it an extremely cost-effective solution.

Eutelsat's fleet of Low Earth orbit (LEO) satellites, called ELO (Eutelsat LEO for Objects) is the first constellation designed for IoT. Low Earth orbit is particularly well-suited to the narrowband connectivity required for connected objects, and the new constellation will demonstrate the fundamental complementarity between terrestrial LPWA networks and satellite technology.

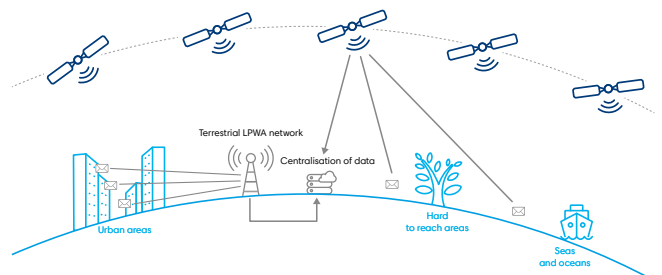
CELLULAR AND IOT SATELLITES

IoT has already brought with it massive changes to how we operate businesses around the world and is set to continue changing our perceptions of what is possible.

However, what makes IoT possible is connectivity. Businesses around the world are quickly expanding, generating the need for a long distance, reliable and robust IoT connectivity solution.

Cellular is an effective connectivity solution wherever there is signal - but business today are expanding beyond the limits of cellular signal. In a globally connected world, we now need to look beyond cellular, and extend the range of solutions available.

IoT satellite solutions can help cover the ground where cellular connectivity is lacking. When in range of a cellular signal, businesses can connect to and enjoy the speed and power that cellular offers. When out of range, switching over to IoT satellite solutions provides a seamless and reliable solution no matter where the business operates.





IoT SERVICES CONCLUSION

CONNECTING IoT ALL

No matter how you connect, it's clear that IoT will change the foundations of what we thought possible. From Smart Cities to remote monitoring and environmental prevention, it will provide business and people alike new ways to interact with the world.

Businesses who prepare for such a technological shift will surely gain a competitive advantage, and securing a reliable connection is the first step towards gaining the edge. Satellite has unique advantages to connect IoT assets, offering truly ubiquitous coverage which can reach objects with limited or no access to terrestrial networks. It is highly reliable with guaranteed SLA's and delivers a consistent service across the coverage.

Combining satellite technology with terrestrial IoT will be key to accessing the economies of scale required to deploy global IoT, extending the reach of terrestrial IoT cellular networks with ubiquitous, global coverage across land and sea.

IoT FIRST - THE FIRST STEP TOWARDS A CONNECTED FUTURE

IoT FIRST is a simple, integrated satellite IoT solution delivering two-way IP connectivity between remote assets and the customer's application, at a price point adapted for IoT. Designed to meet specific IoT technical & business requirements, terminals have low power consumption with advanced power-saving modes, and operate with a small, inexpensive antenna. The hub has high spectral efficiency with no data overheads and can support hundreds of thousands of terminals.

In short, Eutelsat IoT FIRST enables enterprises to focus their time and resources on their core business, rather than asset connectivity. It's ideal for enterprises to connect fixed assets such as smart meters, ATMs, and alarms, or service operators to backhaul IoT networks, offload IoT traffic from LTE links, and deliver IoT connectivity outside licensed territories.

If you would like to find out more about IoT FIRST, contact Eutelsat by visiting our website, or check out our free resources [to find out more about IoT and satellite connectivity](#).

Eutelsat is one of the world's leading and most experienced operators of communications satellites. Our extensive network of high-performance satellites, located between 133° West and 174° East, provides capacity to clients that include broadcasters and broadcasting associations, pay-TV operators, video, data and Internet service providers, enterprises and government agencies.

Eutelsat's satellites provide ubiquitous coverage of Europe, the Middle East, Africa, Asia-Pacific and the Americas, enabling video, data, broadband and government communications to be established irrespective of a user's location.

Headquartered in Paris, with offices and teleports around the globe, Eutelsat represents a workforce of 1,000 men and women from 46 countries who are experts in their fields and work with clients to deliver the highest quality of service.

What can we do for you? Please visit
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