**How Satellite Communications Brings Benefits to The IoT**Target Site: cyberdb.co  
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Prospect request: The topic touches ioT, it will be better if you can also discuss security issues in IOT too

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The nascent Internet of Things (IoT) movement promises to deliver many kinds of new services enabled by the relentless shift towards the interconnected network of devices, as well as set the stage for unleashing the next wave of disruptive technologies. Why satellite technology plays a key role in making the IoT a reality.

The Internet of Things (IoT), as its name implies, relies heavily on the Internet, but another technology has played a vital role in helping the connected global economy develop, and that is the satellite technology. While many consumer-centric devices rely heavily on the mobile networks, which are terrestrial-based, business-centric applications often need the greater reach and reliability offered by the satellite technology. Here are some services and benefits that come directly from satellites, without which the Internet of Things just wouldn’t survive.

As urban dwellers, we often overlook the role of satellite technology in providing vital communication links to remote areas where terrestrial networks are unavailable or out of reach. Despite the roll-out of terrestrial networks to many parts of the world, there are many regions that remain unconnected which rely on satellite connectivity. It is either physically not possible to connect users at sea or in the air except via satellite or there is no business case to justify the costs to roll-out fiber to remote, sparsely populated areas. As such, satellite technology has a key role in enabling new applications and business processes that are making the IoT a reality.

**Here are the top 10 benefits satellite communications brings to the IoT movement:**

**1. Connecting remote assets**

Business operations that extend to geographically remote environments depend on satellites to provide the critical communication means to conduct remote facility monitoring and real-time asset management at unmanned sites and [offshore platforms](http://www.thuraya.com/sites/all/modules/ckeditor/ckfinder/userfiles/files/sectors/energycomms/Energycomms%20casestudy.pdf).

One of the ways modern businesses use the Internet of Things and the related tech it has developed, is to connect the businesses that extend across various geographical areas. Monitoring assets, communicating with remote facilities and managing unmanned, remote sites can all be done through the power of connected technology. Without satellite technology, none of this would be possible. This, then, would greatly increase the expenses that the modern business faces, or would end up preventing certain operations from happening in the modern business world.

To the average observer, terrestrial mobile networks appear sufficient to cover this need, but this is not the case in all areas of the world. Off Comm News indicates that large mobile providers have been providing this type of connectivity with great success, but “the story is different in areas where mobile network coverage is patchy, or in geographies like North Africa, the Nordics and deep into the Eurasian landmass, where it is often non-existent.” In these instances, satellite may be the only way to track assets or communicate with facilities.

**2. Driving the use of sensor networks**

Energy and mining companies are exploring more extensive usage of satellite-based sensor networks to support their offshore exploration projects.

**3. Transforming transportation infrastructure**

Broadband connectivity on trains, cargo vehicles and maritime vessels is a burgeoning trend in the global transportation landscape, and satellite communications plays a pivotal role in enabling innovative mobility services.

**4. Developing sustainable cities**

City administrators around the world are harnessing the power of the IoT to drive energy efficiency measures and smarter resource allocation to help make cities more sustainable; for instance, satellite is key to enabling smart grids to be extended to remote regions where terrestrial networks fall short.

**5. Facilitating mobile banking and retail**

Satellite can serve as the communications backbone that keeps wireless ATMs and mobile point-of-sales applications running smoothly [across a broad geographical span](http://thuraya.com/content/thuraya-collaborates-western-union).

## IMPROVING MOBILE CONNECTIVITY BEYOND SMARTPHONES

Imagine a future where sensors on trains allow a remote manager to monitor location, speed and even the cabin temperature as passengers travel to and from work. Imagine a world where cargo vehicles and even ships at sea have sensors and connectivity to allow them to stay constantly on the radar of their dispatcher back at the office. This is no longer a future scenario, thanks to the Internet of Things.

However, this type of innovative mobility requires the ability to reach vehicles no matter where they are, even if they are in remote areas far from base operations. Again, mobile networks break down in many parts of the world, and satellite technology is necessary for the connected devices used to track vehicles in this way to actually function properly and continue to convey the data they are designed to convey.

**7. Reliability**

In an era of increased communications traffic, maintaining a high level of service reliability is always a key requirement for effective IoT deployments. Carrier integrated providers need to work with a satellite provider with a reliable network that caters to applications such as remote asset monitoring ensuring reliable, always-on connectivity.

## IMPROVED RELIABILITY AND SPEED

As companies develop more and more devices and services connected to the Internet of Things, those same companies need a way to ensure that the services they provide are going to be reliable. Satellite technology allows more reliability for IoT devices and services than land-based networks alone. For applications that demand always-on connectivity, satellite integration is essential.

Similarly, speed is becoming increasingly important to IoT developers and the people who use their services. According to Randy C. Roberts of Bosch, “the emergence of IoT is therefore driving up the demand for high broadband speeds to support bandwidth-intensive applications in real time. Users need to invest in mobile satellite equipment designed to deliver industry-leading broadband speeds with ease.”

**6. Ubiquitous coverage**

A new breed of innovative IoT applications will emerge from the connectivity of intelligent devices. Expected to encompass billions of devices around the world, the potential scale of the IoT demands ubiquitous network coverage between satellite operators and carrier integrated services, even in remote locations.

**8. Speed**

The future landscape of the IoT involves the exchange of data between interconnected objects to facilitate quicker decision making and enhance business processes. As such, the emergence of IoT is therefore driving up the demand for high broadband speeds to support bandwidth-intensive applications in real time. Users need to invest in mobile satellite equipment designed to deliver industry-leading broadband speeds with ease.

**9. Cost**

Terrestrial networks can be costly to deploy in some remote regions, and mobile satellite services are still widely viewed as a more affordable communications technology over other existing satellite platforms.

**10. Integration**

The IoT is expected to continue driving up market demand for the integration of satellite into the communications mix. Carrier integration providers need to partner with a satellite operator that is able to provide the necessary technology integration support as well as innovative hardware and flexible satellite infrastructure which are customizable to their users’ needs.

## SATELLITES FOUNDATIONAL FOR M2M COMMUNICATION

Machine to Machine (M2M) communication is paramount to the Internet of Things landscape, and satellite technology is foundational for the development of this technology. According to NSR, by 2023 the world will have an estimated 5.8 million satellite M2M and IoT connections. Because M2M communication must be reliable, these applications often rely on satellite, rather than terrestrial networks like many consumer-facing devices and applications.

The connection between the Internet of Things and satellite technology continues to grow. As more and more devices become connected, that link is going to continue to expand, proving the true benefit of satellite technology in the modern connected world.

The benefits that that are outlined above capture the relevance that mobile satellite communications brings to the IoT landscape. But these are just the top of the proverbial iceberg. To deliver the promise, satellite operators and carrier integrators need to work together to enable seamless connectivity that propel our generation into the future. How we do that effectively will be the key to transforming IoT affects us all.

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