



HYPER-CONNECTED IoT  
RETHINKING INTERCONNECT  
ENHANCING CYBERSECURITY  
PHYSICAL SECURITY FOR IoT

CHANGING THE GAME FOR  
SMART FARMING

DELIVERING  
SMART  
HOME

5G & MASSIVE

IoT

POWERING  
INNOVATIONS  
UNTETHERING  
OPTICAL LANS

REMAKING  
IoT WITH  
CONNECTED  
DEVICES



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## Supporting a Hyper-Connected Reality

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### What is a Hyper-Connected Device Revolution...How does it affect end-users?

The growth of IoT (Internet of Things) devices has created a hyper-connected reality, through which a multitude of devices and systems interact seamlessly, transforming our way of life—a veritable revolution of devices and connectivity. IoT devices allow end-users to essentially take the internet wherever they go. With thousands of diverse types of IoT devices impacting people where they live, play, and work—whether in businesses, enterprises, industrial spaces, medical spaces, or otherwise—the possibilities are simply endless. As a result, the demand on and for reliable wireless and fiber networks compounds, and more and more resources are being deployed as rapidly as possible to meet this new heightened device demand.



We're taking connectivity closer to the brink than we ever have before.

End-users have grown increasingly reliant on their connected devices, showing no signs of slowing down. Consider how often you reach for your phone to Google something, use your smart doorbell to track package deliveries, or ask your Amazon device for the day's forecast. These actions demonstrate how readily individuals have integrated connected devices into their daily routines.

# How does it affect Service Providers?

Service providers are aware that end-users' optimal usage of these devices weighs heavily on the wireless and fiber networks they rely upon to operate. Thus, it's essential to invest in building infrastructure that can respond to the growing demand for hyper-connectivity, and service providers must prioritize the implementation of robust and scalable networks. This includes investing in high-speed networks, cloud-based services, and advanced analytics capabilities, all of which will play a crucial role in meeting end-users' increasing expectations.

A promotional graphic for Pipeline Video Services. The background is dark with a close-up of a professional video light fixture on the right. On the left, the text 'Pipeline Video Services' is written in a large, white, sans-serif font. Below this, a bulleted list of services is provided: 'On-site Videos', 'User Interface Demonstrations', 'Editorial Interviews', and 'Animation and Whiteboard'. At the bottom left, there is an orange button with the text 'GET STARTED >>'. The Pipeline logo, consisting of the word 'Pipeline' in white and a stylized grey bar, is at the bottom left. Three white chevrons point downwards on the right side of the graphic.

**Pipeline Video Services**

- On-site Videos
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- Editorial Interviews
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The hyper-connected device revolution has made data more accessible than ever—not only to end-users but also service providers. The amount of data being generated and shared by these connected devices is beyond imagination. The critical question is... how can we harness this data? And what insights can be gained to improve our services, products, and processes? The answer lies in data analytics, and it is becoming an essential learning process for businesses and service providers alike.

As IoT devices were originally rolled out to solve specific problems or improve quality of life on a more limited scale, users and businesses have become aware of the value in the metadata that these solutions are simultaneously able to collect. IoT devices are now sought after to help provide answers to questions around novel approaches to cull previously untapped value from data. This change in perception has pushed the demand for these kinds of systems across all enterprises, requiring networks and infrastructure to provide solutions related to bandwidth, configuration of networks, architecture and design, and more.

That being stated, it is *imperative* for service providers to have a comprehensive set of hosted operational services to make certain that these networks always maintain maximum uptime and full functionality. One such service is Network Monitoring (also referred to as NOC), which ensures the network is managed and monitored effectively. If a connectivity issue affecting the network should arise, it can be resolved swiftly, limiting impact to the data and network - and by extension, the device and end-user.

## How do we monitor the networks today? What is possible in the future?

Today, managing and monitoring IoT devices and services often involves using specialized software

platforms that can help monitor device connectivity, manage device configurations, track usage patterns, and troubleshoot issues remotely. These platforms also provide key data analytics to help identify patterns and insights - the data coveted by so many. This is where many answers to the future of a hyper-connected reality can be sculpted and refined.

Moving forward, we can expect to see continued advancements in IoT management and monitoring, including the use of artificial intelligence (AI) and machine learning (ML) to automate many of these processes. For example, AI and ML could be used to identify potential issues *before* they become major problems, predict usage patterns and device failures, and optimize network performance to improve overall reliability and uptime. Preventative maintenance will soon become the norm vs. repair after the fact.

Overall, we predict the future of IoT management and monitoring will likely involve an intricate combination of advanced technologies and human expertise to ensure that IoT devices and services continue to meet device and end-user expectations as well as enhance everyday experiences.

## What we're seeing

At Fortress Solutions, we have personally witnessed the effects of this new hyper-connected reality on both enterprises and end-users alike.

### JBG SMITH

As a premiere partner for end-to-end facilities management services for JBG SMITH's fiber optics, edge data center, and 5G infrastructure across their [National Landing](#) project (known as the first 5G Smart City in the United States), we have been able to see the impact this is creating for both service providers and end-users. National Landing is a "community of opportunity" located at the center of the DC region, blending the best of both city living and urban outdoors—creating a space built specifically for this new, hyper-connected reality. National Landing is poised to deploy cutting-edge digital infrastructure, promote seamless connectivity, and fuel innovation with new business models in Industry 4.0—not only creating great potential for JBG SMITH but for its end-users... businesses, residents, government agencies, and more.

*Adam Rashid, SVP, Investments, and lead of digital infrastructure at JBG SMITH stated, "We are able to deliver the power of converged digital infrastructure and seamless network operations in National Landing, providing leverage for entrepreneurs, universities, and global technology companies to*

*deliver digital transformation across both their digital landscape and built environment. We're delivering a place where city life is reimaged—more connected than ever before."*

### DRONESENSE

As the Technical Assistance Center (TAC) for DroneSense, a prominent leader in the drone/UAS sector that provides the public safety sector with the "most complete drone management and collaboration platform," we see firsthand how connected devices such as drones are vital to first responders and their ability to protect and serve our communities and families.

Drones equipped with the DroneSense platform provide first responders with a comprehensive level of situational awareness that leads to more lives saved and safer outcomes. This reliability on a

seamlessly connected device and network uptime has never been more crucial.

According to Director of Customer Success John McLeod, “Our DroneSense Remote software enables first responders to fly drones remotely to provide comprehensive situational awareness, leading to improved incident response times, increased officer safety, and better overall outcomes. Fully integrated with the DroneSense software platform, it provides everything you need to fly, share video streams, and manage successful public safety drone programs and support Drone as First Responder (DFR) missions.”

## Are there concerns for a hyper-connected reality?

With any revolution, there are questions and concerns that inherently arise. While a hyper-connected device revolution offers tremendous benefits for increasing productivity, efficiency, and convenience, it also triggers debate over privacy, security, and the potential for misuse of personal data. The sheer amount of data generated by connected devices can be profuse. Questions naturally arise... what data *can* be shared? What data *should* be shared? *How* should it be shared and/or used? And many more...

These are all valid questions that should and need to be approached with caution and careful thought. The data complexity will only continue to grow. It is imperative that proper safeguards, along with security processes and protocols, are created and maintained to protect not only the service providers and enterprises but also the end-users.

## What does a hyper-connected future look like?

It's hard to overstate the potential of a hyper-connected reality. Today, the computing power available in an average smartphone is greater than what NASA employed during the Apollo missions. It's truly mind-boggling. As connected devices continue to grow in number and power, we can only dream of what the future may hold.

The data collected from these devices has the potential to transform nearly every aspect of our lives. But to make this a reality, we'll need a robust and sophisticated infrastructure capable of supporting this growing demand. This will require significant investment in new wireless and fiber networks, as well as advancements in areas like 5G/6G technology and edge computing.

We believe that smart cities will lead the way in efficiency and sustainability, while healthcare will shift toward a more personalized and accessible experience. Transportation will be made safer, and even more autonomous, with the emergence of self-driving cars. The possibilities are truly endless. As we look to the future, the only limit will be our imagination.