How to Select the Right Cellular Connectivity Service for Your IoT Deployment

Why Selecting the Right Cellular Connectivity Service is Essential to Any Successful IoT Deployment

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IoT deployments now encompass applications and services in vastly different industries addressing varying needs for both businesses and consumers. Each deployment has its own specific set of needs requiring specialized connectivity options. Rarely is there a one-size fits all connectivity solution for IoT deployments that can range from requiring low bandwidth connectivity for a small number of static locations in one country, to applications that require higher bandwidth connections, to thousands of continuously changing locations across multiple countries.

The spread of IoT applications ranges from a simple, static sensor in a water pipeline that alerts the operator of a low or high level of water to warn of leakage or flooding to systems such as those in connected cars that constantly shift location and remain in continuous communication with systems and applications from multiple service providers. It's clear that a basic, low frequency low bandwidth communications requirement such as that of the water pipeline sensor has radically different requirements to that of a medical or automotive service provider. Yet, from a business point of view, the challenges remain similar to the company.

The water utility has thousands upon thousands of sensors across its network, which will span areas of poor or no coverage and potentially traverse national boundaries. Does it make sense for a water utility to develop relationships with network providers in each market it operates in and for it to devote time to assessing the most appropriate connectivity option for a specific site? Probably not when there are IoT connectivity providers who can do this work for you and most likely achieve excellent outcomes at a lower cost.

Equally for those with more complex requirements, should a healthcare organization or an auto maker look to agree global relationships and service guarantees with a network of different connectivity providers or should it abstract the complexity away to a third party. Doing so will certainly save time and cost.

Nevertheless, concern by companies about taking IoT connectivity services from specialized providers exists. This is because there's a perception that some form of control may be lost and an organization may become over-dependent on their IoT connectivity provider. Specialized providers should be able to allay these concerns by providing solutions that maintain control for the company while making it simpler and cheaper to access IoT connectivity.

The key is having the tools and flexibility to manage whatever solution portfolio(s) you have or are planning. This means that companies can manage their services while still having access to the support, purchasing power and toolsets of their supplier. Critically they can gain deployment flexibility, which is so vital to all IoT deployments. For individual companies, gaining that deployment flexibility with direct relationships with carriers is not so straightforward and there is an obvious downside to over-committing to capacity for a service that may not bring the anticipated scale of traffic to a network provider.

While there is a huge appetite for IoT in all its forms, typically deployments start from a relatively low number of users at service launch and rise rapidly as propositions gain traction. This means IoT connectivity services need to be flexible and highly scalable in order to take into account starting from a relatively low level addressing the expectation that the number of connected devices could run into tens of thousands – or even higher volumes.

The challenge of that is compounded by the relative newness of the market which means it is hard to predict take-up and service lifecycle by looking at previous or similar projects. Companies want to avoid committing to high volume connectivity contracts at the outset, yet have the assurance that they can scale up to high volume as demand materializes.

Added to the requirements of flexibility and scalability is security as IoT deployments are increasingly seen as an area in which security threats can occur. Security is a key consideration to any deployment whether in the connectivity itself or in the interfaces provided to end customers or intermediaries. When your data and/or services are remotely accessible, security cannot be an afterthought or an add on, instead it must be fully integrated into the service at all levels from the edge device to the back office systems – ideally from the design stage.

In addition to ensuring security, companies – large and small – want to accelerate their time to deployment to get to market ahead of their competitors. It is therefore important that specialist IoT connectivity providers are be able to serve all sizes of organization and minimize the barriers to entry.

You want an IoT expert who can guide you away from mistakes and help you select and build the correct service – providing end-to-end design and system architecture that will meet your short and long-term needs.

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IoT CONNECTIVITY SERVICES

IoT solutions are often deployed across different markets and territories with varying coverage density, so direct relationships with national telecoms carriers will not always address all the markets an organization serves. Even within a single market, relationships with more than one carrier may be required to guarantee coverage, cost and quality in order to provide resiliency in the event of a network failure or network congestion.

However, there are significant challenges involved in managing multiple carriers, their different pricing plans and different network technologies. These can be time consuming to agree, manage and reconcile and it is challenging for a single organization to ensure they are able to receive the best coverage available, in each market and at the most competitive price. IoT connectivity service providers can offer consistent services across multiple markets and networks from an intuitive single point of contact.

They also offer reliable and predictable coverage – even to areas where there is no cellular coverage and alternatives such as satellite capacity or short range RF that can be managed as part of the service. Further advantages of IoT connectivity service providers include managed security across multiple networks and the benefits of bundling SIM provisioning, SMS, data and voice services into a single deal.

The advantage for businesses is that this approach creates operational and cost efficiency. Companies will not waste resources striking and managing individual deals with multiple carriers. The right IoT connectivity provider must have the necessary global reach and purchasing power to both lower cost and seamlessly aggregate multiple networks tailored to your application, location and market.

Saving time and money is of obvious value, but organizations also want to maintain control of their IoT connectivity so they know their services are performing correctly. IoT connectivity specialists should address this requirement by providing organizations with tools to enable them to provision, manage and analyze their connections across multiple wireless technology protocols. Keeping track of connectivity in this way is fundamental to the success of IoT deployments and easy-to-use, simple-to-understand tools and interfaces should be a pre-requisite for organizations.

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TOP 10 CRITERIA FOR SELECTING THE RIGHT IoT DATA PLAN

Telit's long experience of providing connectivity services to organizations has enabled us to identify the most important features of an IoT data plan. Our top ten criteria are presented below:

1. Customized plans for IoT data, SMS and voice

Different IoT applications use different types of plans. Sometimes you may need only a data plan but, at other times alarms may need to be sent over SMS, or perhaps voice may be required for specialized applications that need human interaction. Make sure your provider offers customized IoT data packages from short bursts to large broadband files for all the different types of cellular data.

2. 2G, 3G, 4G/LTE mobile broadband packages

In some cases, where some carriers may be phasing out their different generation networks, you must look for a provider who can harmoniously support 2G, 3G, and 4G LTE standards. Ensure your provider accommodates both your new and legacy devices.

3. Coverage on tier-one mobile networks

Do not settle for spotty network coverage; your provider should offer universal coverage on established tier-one networks, with reliability and redundancy. Tier-one mobile networks are secure, reliable, mature and scalable with dependable coverage in both urban and rural areas.

4. Seamless roaming across networks and regions

If you need to track mobile assets, you need a network provider that can follow you anywhere. The right provider can seamlessly integrate the networks of multiple carriers so you do not lose service as you move across different regions, offering customized roaming packages with a single invoice with no hidden charges or rate surprises.

5. Multi-layer security and vpn connections

Make sure your IoT connectivity provider offers multi-layer network, routing and transport security across your own tailor-made private, geo-redundant VPN network, plus 24/7 monitoring and network operations center support.

6. Simple agreements predictable pricing and no hidden fees

When managing just a few things or thousands of connected devices, sorting through bills can be cumbersome and connectivity costs can get out of control. Look for an IoT data package that features simple agreements, predictable pricing and no hidden fees for roaming or unexpected data overages.

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7. 24/7 support by dedicated IoT experts and dedicated account teams

If your IoT solution is not going to sleep at night, can your IoT connectivity provider afford to sleep as well? Critical events can happen at any time; make sure your provider is equipped to offer around the clock support to ensure your IoT deployments are up and running 24/7. In addition, look for a dedicated account team with a single point-of-contact focused on helping you grow your business.

8. Connectivity management with built-in connection provisioning and analysis

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9. Integrated cloud-based application enablement platform

Connecting things to apps should be easy, you want a solution that lets you manage both connectivity and application development from a single, intuitive web-based interface. These should let you manage connectivity as well as data collection, data storage and data integration via built-in dashboards, simple APIs for web-based and mobile apps, and enterprise systems for big data analytics.

10. Choose a leading stable and specialized IoT service provider

Make sure your specialized IoT service provider has the experience and resources necessary to effectively enable your IoT deployment. The provider should also have the critical infrastructure and support capabilities to help you scale up and grow as your business grows in IoT.

CONCLUSION

IoT deployments have specific connectivity requirements that differ substantially from those of traditional internet and physical businesses. Specialized providers of IoT connectivity that understand the specific demands of IoT services and applications therefore have huge value to offer organizations because they have the experience and capabilities to:

Get you started faster by utilizing existing carrier relationships to provide the coverage you need, when and where you need it. Their experience means they will find you the most suitable connectivity for your application and the locations it operates from.

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Get you started at lower cost without upfront investment via a pay-as-yougrow connectivity service model that scales up flexibly. An IoT connectivity service provider has the relationships and the purchasing power to strike competitive deals and pass on the benefits to you.
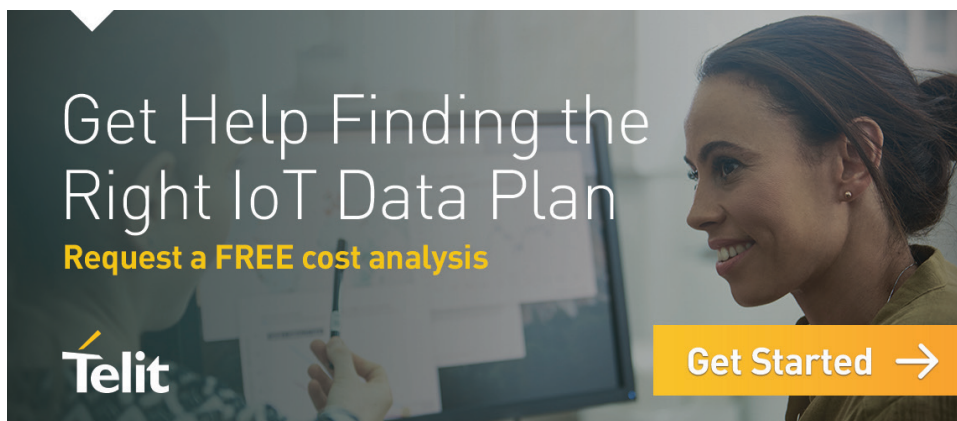
Assure the quality of your IoT platform, through providing analytical tools. An IoT connectivity provider has the experience of support many different types of applications so understands the quality you require. In addition, a provider knows what insights you need to be able to manage your services effectively so will provide you with the tools to gain that knowledge and keep in control of your IoT deployment.

Address security concerns by providing multi-layer network, routing and transport security across your tailor-made VPN with 24/7 monitoring and support. Security presents probably the greatest threat to IoT deployments so working with a specialized provider gives you access to their knowledge of security issues affecting other services and their capabilities to detect and prevent security breaches.

Reduce the management burden by providing provisioning, management and analytical tools. A specialized provider will know what's important to you and provide you with the means to access important information, the less important day-to-day operational tasks will be abstracted away – unless you want to remain closely involved.

Control costs by continuously negotiating competitive deals with carriers and bundling services such as SIM provisioning with SMS, voice and data capacity. An individual organization can't hope to continuously manage its relationships with multiple carriers in multiple markets to secure the best price for the best quality service. A specialized provider makes this a core value proposition.

Telit has assembled IoT connectivity capabilities, monitoring tools and technologies across the globe and brought them together in attractive service models so you don't have to do it all yourself. Find out how Telit can help you select an IoT connectivity plan that's right for your business and support you as you develop your IoT service: http://www.telit.com/products-and-services/iot-connectivity/subscriptions-rate-plans/.

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