How Business Leaders Can Speed Up IoT Deployments

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WHITE PAPER

Companies are struggling to swiftly deploy wireless IoT solutions to critical business needs, worsened by the disruptions of the last two years. Business leaders are engaging wireless network operators' integrated solutions to speed and scale their IoT deployments.

The abrupt and ongoing business disruptions since early 2020 have changed the way business leaders think about leveraging IoT to address their most pressing business problems: optimizing costs and improving operational efficiency.

IoT systems directly address these problems by combining four elements:

- Data from a fast-growing array of IoT devices, including sensors.
- Narrowband-IoT, LTE-M, and 4G/LTE network technologies (and 5G in future).
- IoT software applications designed for fast deployment.
- Advanced analytics at the network edge.

The business benefits of this IoT combination include:

- Amassing current, actionable data on operations, including equipment issues and status, asset tracking, transporting and warehousing goods and materials, and much more.
- Generating up-to-date end-to-end information about and visibility into the supply chain.
- Responding to sudden shifts in customer behaviors, such as new, pandemic-driven buying patterns, preferences, and priorities.
- Improving efficiency for a wide range of business processes.
- Increasing workforce productivity.
- Reducing costs in production, logistics, distribution, and more.

For business leaders now, the value of these benefits has dramatically increased, especially in an unprecedented tight labor market.

IoT solutions are no longer academic considerations. Instead, these leaders are prioritizing fast, cost-effective IoT deployments.

These wireless IoT deployments cover highly diverse projects:

- Extending manufacturing automation efforts into new areas and tasks.
- Support so-called work-from-anywhere initiatives for non-office workers.
- Tracking the impact of changed consumer behavior.
- Improving employee training, safety, and productivity (for example, through augmented/virtual reality technology).
- Meeting new compliance mandates.

But quickly creating and deploying manageable IoT projects is a complex process. To simplify it, business leaders should evaluate mobile network operators, which are emerging as effective IoT solutions providers. The reason is that today's IoT projects typically rely on wireless network technologies such as LTE and Narrowband-IoT to cost-effectively deploy lots of IoT devices and connect them to edge computing and analytical resources.

As a result, mobile operators potentially are well-positioned to create integrated solutions that consist of IoT device companies, software vendors, the operators' networking technologies, and management tools, and a full set of consulting services.

This combination can dramatically simplify IoT for customers. Business leaders should evaluate the mobile operators' IoT capabilities in light of their own IoT requirements to enable fast, targeted deployments.

LEVERAGE INTEGRATED IoT SOLUTIONS

Business leaders responsible for IoT decisions now look to packaged, ready-to-run solutions to simplify, speed, and scale business-critical IoT deployments. Mobile network operators are well-positioned to assemble, coordinate, and install these fast-deployment solutions, if necessary, on a global basis.

IoT systems, especially large-scale ones, quickly become complex to design, procure, validate, integrate, deploy, and manage. A shortage of in-house IoT talent and experience worsens the complexity and lengthens deployment times.

Fast-deployment solutions should enable the most common horizontal business use cases (with provisions for adapting them to specific business requirements in vertical market segments) **including:**

Fleet Management

Vehicle locating and monitoring.

Asset Tracking

Locating, monitoring, protecting trailers, power equipment, and more.

Sensor Solutions

Round-the-clock monitoring and alerting for business, industrial, and manufacturing processes.

Smart Video Analytics

Continuous automated scanning, analysis, and alerting of security video.

IoT Data Point

An Oracle Corp. November 2021 survey of 800 enterprise IoT decision makers found that:

64%

would opt for an 'off-the-shelf' IoT solution over a custom-built offering.

75%

of respondents want connectivity to be 'baked-in' or bundled by the solution provider.

70%

want providers to include data and analytics tools as part of a comprehensive solution.

Source: Oracle Corp., "Survey Highlights Key Components to Provide Enterprises with an Easier Path to IoT Adoption"

CAPABILITIES TO LOOK FOR IN INTEGRATED IoT SOLUTIONS

Two key IoT "building blocks" are certified devices and connectivity management.

Certified IoT Devices

Mobile operators should demonstrate a pro-active and wide-reaching program to certify and validate third-party modules, chipsets, and devices for its IoT network technologies.

For business leaders, the pay-off is being able to choose from an array of IoT devices, which can be quickly installed, activated, and managed.

Some of the most common IoT devices include GPS tracking, telematics data on vehicle diagnostics and driver behavior, push button alerts, indoor air quality, refrigeration monitoring, motion detection, gas monitoring, leak detection, tank level monitoring, and much more.

To be useful, the data collected by IoT devices needs to be processed, integrated with new or existing systems, and analyzed. The mobile operator should demonstrate that it's integrated IoT solutions can transform raw data into actionable results that enable better decisions, process improvements, greater efficiency, or lower costs.

Connectivity Management

Most importantly, the operator should have proven features and services that **enable customers to quickly leverage the available network technologies and the inventory of available IoT devices, including:**

- A comprehensive, automated process to select, order, and provision a broad range of IoT devices.
- Turnkey eSim service to enable remote activation and configuration of IoT devices over the air.
- A range of billing models (such as recurring, prepaid, pooled, location- or time-based) that can be matched to enterprise requirements.
- Web portal with well-designed user interface, coupled with backend self-service tools to manage these capabilities.
- Real-time usage monitoring, diagnostics, and self-support features that automate connectivity management and troubleshooting, and minimize manual processes.

ASSESS THE OPERATOR'S IoT CUSTOMER SERVICE/SUPPORT MODEL

Multi-national IoT deployments entail even more complexity. Business leaders struggle to piece together a patchwork of operator agreements—all with different contracts, service level agreements, management interfaces, and customer support. Mobile operators should demonstrate a customer service model that directly deals with this complexity.

To simplify customer service for IoT, business leaders operators should prioritize such network operator capabilities as:

- Dedicated account team, with specific IoT experience and expertise.
- A consultative approach that begins by identifying the customers' particular business problem, spending plan, and desired business outcomes for IoT.
- Specialist IoT consulting services that ensure support when and where needed during the project life cycle, from initial design through post-deployment support and management.
- Simple, clear, and flexible pricing plans that are consistent across regions.
- A streamlined contract framework that can be applied globally.

OPTIMIZE IoT PERFORMANCE BY USING VARIOUS WIRELESS NETWORK TECHNOLOGIES

Being able to leverage different wireless network technologies gives business leaders options for deploying IoT in more locations and for optimizing IoT performance and cost-effectiveness.

The mobile network operator should be able to support today's key wireless networking technologies for IoT – Narrowband-IoT, LTE-M, 4G/LTE, and 5G. Currently, these technologies offer business leaders a range of performance, reach, and cost options. They enable cost-effective, large-scale IoT deployments in multiple locations.

Narrowband-IoT and LTE-M enable very large IoT deployments, such as connected household water meters in a major city. These wireless technologies send just a small amount of data infrequently, use little power, stay connected for a long time, and are relatively low-cost.

The majority of IoT solutions today use 4G LTE, a highly capable, reliable, and widely available technology. Compared to the earlier 3G, it features lower latency and a much higher data speed, typically about 20 Mbps downloads. It supports IoT use cases that are more data-intensive such as fleet management, asset tracking, automated guided vehicles on factory floors, and video surveillance.

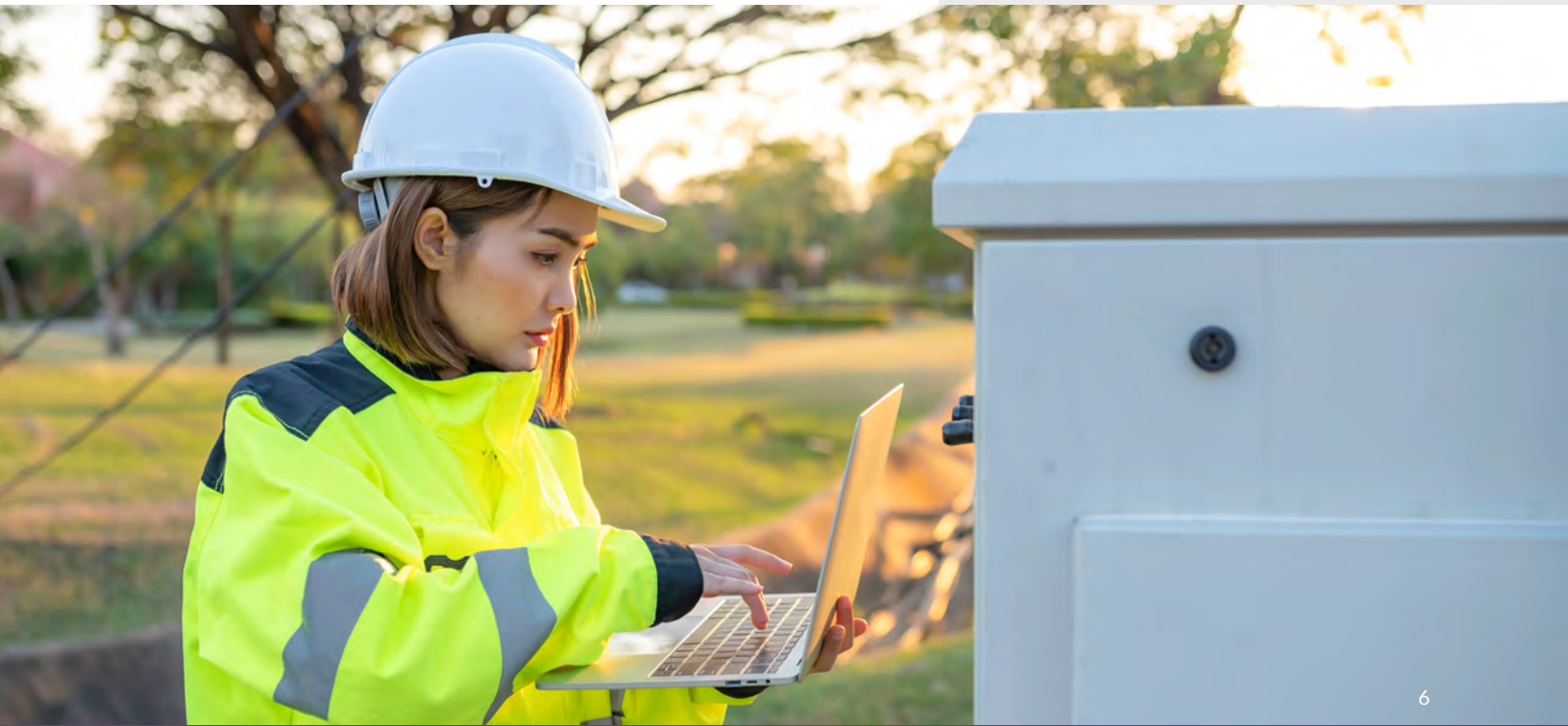
Mobile operators should be able to leverage these multiple wireless technologies to optimize enterprise IoT solutions to specific business problems.

IoT and 5G

5G services is available today. Currently, it's found mainly in handheld devices, notably 5G-equipped smartphones. It is not yet widespread in IoT devices. But its very high bandwidth, low-latency, reliability, and availability over multiple frequencies eventually will transform enterprise IoT.

Enterprises will be able to:

- Deploy cost-effectively very large numbers of data-intensive IoT devices.
- Optimize in-building IoT network design, without being hobbled by network cabling.
- Leverage 5G for real-time use cases.



CONCLUSION

Many companies are speeding or scaling up wireless IoT solutions to optimize costs and improve business efficiencies. But to create manageable, large-scale IoT deployments is a complex process. One way to simplify it is to evaluate integrated IoT offerings from mobile network operators. The best of these offerings package frequency band options (including 5G), software vendor partnerships, account and contract streamlining, and a full slate of IoT lifecycle support services.

To learn more about T-Mobile's unique advantages in the IoT space, visit our website or contact 844-983-2351.

5G: Capable device required; coverage not available in some areas. Some uses may require certain plan or feature; see T-Mobile.com.

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