James Brehm & Associates

Why AT&T Is the Right Choice for Companies Migrating 2G/3G IoT Devices

2G/3G Network Sunset Is Coming

The 2G and 3G network sunset in the U.S. is rapidly approaching, and two highly significant events will occur: first, the 2G and 3G devices currently in the field will become obsolete and unusable. Why is this relevant? Because 2G and 3G devices equal more than 50% of the current cellular Internet of Things (IoT) devices in operation, with a total nearing 64 million[i]. Second, 4G LTE and 5G networks, which are more economical and provide new capabilities, will absorb the newly liberated and much-needed spectrum that had previously been assigned to 2G and 3G networks.

> **More than 50% of existing IoT solutions are 2G and 3G.**

"How is this relevant to companies that are currently using IoT solutions?" you might ask. Well, given that most IoT solutions are on 2G or 3G networks, this also means that the majority of IoT solutions currently being used will also become obsolete unless they are migrated to different networks. With this thought in mind, it is critical for your company to know what network your devices are on and migrate them as needed. Naiveté comes with too heavy a price tag.

For an enterprise, replacing your 2G and 3G IoT solution can be an intimidating task. Unlike the first generation (1G) cellular network, which was shut down in 2003 and didn't support many IoT devices, 2G and 3G networks are relied on by thousands of companies to support millions of IoT devices.

This whitepaper explores the obstacles most organizations face during network sunset, discusses possible solutions, and showcases how AT&T Professional Services is ready to help companies with their critical IoT solutions.

> **AT&T successfully migrated their 2G customers in 2016 and 2017.**

AT&T, the Early Adopter

Most carriers in the U.S. don't have experience migrating millions of IoT connections. And the pressure of completing a cellular network upgrade while migrating customer hardware only magnifies the problem. The success of the AT&T 2G IoT network transition makes AT&T experts in the migration of IoT devices.[ii] AT&T understands the process and knows how to smoothly transition to avoid business interruptions.

2G and 3G networks are over a decade old now, and most enterprise IoT solutions are no longer being run by the employees that originally installed the system. To the enterprise, a migration can look like a new deployment. The migration can be fraught with challenges such as how much bandwidth to use, interoperability, whether or not to use legacy protocols, and or the reuse of existing hardware. Therefore, having an experienced provider like AT&T can help mitigate these risks.

Challenges

Many challenges exist for enterprises, the migration from 2G and 3G to new technologies can often be more complex than the development of a completely new IoT solution. IoT solutions require careful planning from the offset. If an enterprise is using IoT internally for something like tracking products or measuring company efficiency, internal stakeholders must be notified and brought into the planning and decision-making processes. If the IoT solution is customer facing, issues such as notification of customers, warning about service outages, and the need for replacements to either be delivered or installed are among the communication that has to occur with the customer.

Lack of internal expertise impacts the planning for migration. The team may be unaware of the details required to successfully migrate the IoT solution. For example, when does the SIM card become activated? Is it done remotely from the application, or does it happen at the enterprise itself before its deployed? Can the modem be replaced, leaving the original solution intact, or will the system require a redesign and new development? Does the enterprise need to review Service Level Agreements (SLAs), device kitting, logistics, reverse logistics and more? Is the staff prepared for down time? And how will that be managed when down time occurs, as user expectations today seek immediate time feedback and resolution of trouble? These are questions best answered by experts with experience.

Common Obstacles:
- **Lack of Internal Expertise**
- **Failure to Collaborate**
- **Scaling Issues**
- **Lack of Budget**
- **Poor Project Management**
- **Security Risks**

Failure to collaborate is a problem, because IoT solutions rarely involve a single department. A legacy system probably involved departments such as accounting, finance, IT, operations, and product management and they need to be informed to understand the impact on their services. A strong project leader can balance of each department's current method of operations with the impact of the replacement on internal processes.

Many 2G and 3G solutions grew incrementally without facing the issues of scaling. The sunset means the replacement has to be done quickly. Companies can achieve scale by utilizing systems that large companies (such as automotive) directly access the Mobile Network Operators (MNOs) and Mobile Virtual Network Operators' (MVNOs') connectivity platform.

35% of respondents have not determined their budget for sunset.

In a recent survey by James Brehm & Associates, 35% of the respondents had not addressed their company's budget for migration[iii]. As budget allocations are set for the year, and these companies have failed to plan, their profits could be impacted. Budget concerns may lead companies to procure solutions that

are economical but will represent problems for the future.

If no budget for migration has been allocated, the project timeline for migration probably has not been addressed. A project manager may find that milestones will require additional resources not readily available within the company. The project manager needs to be communicative and able to indicate the additional resources needed to develop and deploy the solution.

In studies conducted by James Brehm & Associates, security risks were identified to be top concerns.[iv] IoT devices have been used to penetrate corporate systems, enabling hackers to gain access to sensitive information. These devices may also be subject to corporation espionage or malice. There are several strategies that can reduce the risk of security breaches. No system is foolproof, and vigilance is needed to make sure devices are hardened, attempts at penetration can be detected, and applications are not vulnerable to hacker attacks.

All these challenge point to the need for expertise supporting internal resources. Few companies have the depth of experience to address all these challenges.

Benefiting from AT&T Experience

Experience is critical, not only in implementing a successful IoT solution, but also during network migration. AT&T is the leader in IoT solutions in the U.S. and provides support for IoT solutions globally. AT&T is the fifth largest IoT solution provider worldwide[v] serving over 200 countries.[vi]

AT&T professional services provides customer support in all aspects of the migration from planning to execution and all the challenges in between.

> **AT&T is the largest IoT Service Provider in the US.**

AT&T is the one-stop shop, offering a broad range of high value IoT services to enterprises. Companies may use AT&T resources to reduce costs, time, and stress normally associated with IoT deployments.

The AT&T Professional Services team offers the critical experience for migration planning to assist you with a successful IoT deployment. ATT Professional Services will help any enterprise, any size and type of business and has expertise in virtually every vertical market including banking and finance, government, healthcare, hospitality, manufacturing, retail sports and entertainment, transportation, and utilities.[vii]

Another key ingredient for a successful relationship is the AT&T Foundry. Created to remove obstacles, the AT&T Foundry works with customers to build technology prototypes for real-world solutions. This allows AT&T to create new business opportunities and accelerate growth for their customers' business.

AT&T Professional Services helps:

- **Identify your migration goals**
- **Create or source your IoT devices**
- **Verify your IoT solution**
- **Certify the devices are network ready**
- **Provide logistics**

AT&T Foundry engineers, designers, developers and business professionals create and test industry-specific prototypes for real-life situations. AT&T Foundry is well-equipped to help your business develop, certify, deliver, and transition IoT solutions to market.[viii]

The AT&T Certification Lab can assure your devices connect properly.[ix]

Working with AT&T provides its clients with much-needed expertise by connecting them with a team of professionals who understand their business challenges and specifics of their IoT solutions.

There are many companies out there that offer services to help you in this important network transition. However, their experience does not compare to AT&T migration of 16 million 2G devices.[x]

Recommendations

Working with AT&T, the nation's largest IoT service provider, ensures high reliability and ubiquitous reach. Every service provider is focused on deploying 5G networks. In the U.S., AT&T has shown the ability to both migrate customers and build the future.[xi]

When you select AT&T as your service provider, you get the added benefits of working with AT&T Professional Services who can guide you step-by-step through your migration.

Bringing in AT&T Professional Services early means you have resources that fill the gap with experience that relates to your business' vertical market(s).

AT&T Foundry takes you beyond a proof of concept and creates new devices ready for production.

AT&T Certification Lab makes certain that the deployment in the field will be network-ready.

AT&T Professional Services can provide the logistics support to bring your devices out into the field and have them delivered, installed and activated.

The recommendation from start to finish is to work with AT&T before the sunset.

Conclusion

The 2G and 3G sunset is inevitable. Do you have a plan for this transition? Are you able to do it alone? Building the right relationship is the most important step in a successful migration. AT&T has tools and expertise you need to make this transition as smooth as possible for you, without interrupting your business operations. For more information contact us.

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[i] James Brehm & Associates "IoT Results & News Roundup thru Q3 2019"

110 E. Houston St., 7th Floor, San Antonio, TX 78205
210.401.0051 / http://www.Jbrehm.com

ii https://www.gsmarena.com/at_t_has_officially_shut_down_its_2g_network-blog-22811.php

iii James Brehm & Associates "The 2G and 3G Sunset Survey" (2019)

iv James Brehm & Associates "The 2G and 3G Sunset Survey" (2019)

v James Brehm & Associates "IoT Results & News Roundup thru Q3 2019"

vi https://www.business.att.com/portfolios/internet-of-things.html?WT.srch=1&source=EBPS0000000PSM00P&wtExtndSource=IoT&wtpdsrchprg=AT%2526T%2520ABS&wtpdsrchgp=ABS_SEARCH&wtPaidSearchTerm=%2Bat%26t%20%2Biot&wtpdsrchpcmt=%2Bat%26t%20%2Biot&kid=kwd-297997265698&cid=1617491940&schParam=1622&LNS=PS_IT_IOT_BND_1018&gclsrc=aw.ds&&gclsrc=ds

vii https://www.business.att.com/categories/iot-professional-services.html

viii https://www.business.att.com/solutions/service/internet-of-things/foundry-innovation-centers/iot-foundry.html

ix https://www.business.att.com/content/dam/attbusiness/briefs/att-global-device-certification-brief.pdf

x https://www.gsmarena.com/at_t_has_officially_shut_down_its_2g_network-blog-22811.php

xi https://www.att.com/maketheswitch