

IoT and mobile operators: progress and pain points

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IoT and its challenges for mobile network operators

The Internet of Things (IoT) market is expanding rapidly, as enterprises prioritise digital transformation, writes Christina Patsioura, the lead analyst for IoT & Enterprise Research at GSMA Intelligence, in this report which has been authored by GSMA Intelligence with support from floLIVE. However, mobile operators are struggling to translate this growth into sustainable revenue, as IoT connectivity alone is becoming increasingly commoditised

Challenges for mobile operators include the following:

- **Declining connectivity revenues.** Intense competition from mobile virtual network operators (MVNOs), hyperscalers and IoT service providers is driving down margins, making it difficult for mobile operators to differentiate their offerings.
- **Enterprise churn and value creation.** Operators must evolve beyond basic connectivity as enterprises demand security, integration and multi-country network consistency.
- **Complexity of global coverage.** With 38% of enterprises requiring IoT deployments across multiple continents, traditional roaming models are insufficient, requiring new connectivity frameworks.
- **An investment dilemma around 5G RedCap and legacy support.** While enterprises seek future-proof, low-power IoT solutions, many existing IoT connections still rely on legacy 4G, LPWA and even 2G/3G networks.
- **Enterprise IoT adoption barriers.** Cost of implementation, security concerns and technology integration challenges remain key obstacles hindering IoT deployments at scale.

To capture value beyond connectivity, leading operators are pursuing three core strategies:

- **Developing vertical-specific solutions** – Focusing on high-growth sectors such as automotive and utilities.
- **Deploying cloud-native IoT platforms** – Enabling scalable, API-driven integrations for enterprise customers.
- **Forming strategic partnerships** – Collaborating with hyperscalers, systems integrators and IoT solution providers to enhance service offerings.

The challenges above have created a limited market for operator-led IoT, prompting them to rethink their IoT strategies. To succeed, operators must understand the specific hurdles faced by enterprise adopters. GSMA Intelligence's Global Digital Transformation Survey highlights the key obstacles among potential adopters: high implementation costs, security concerns, difficulties integrating with existing systems, and a lack of in-house expertise. Operators can play a vital role in helping enterprises overcome these barriers. To do so, operators must have the right talent and business resources, together with a modern, purpose-built, IoT technology stack. ▶



IoT has come a long way

Mobile operators have played a critical role in shaping the IoT landscape, evolving from machine-to-machine (M2M) pioneers to key enablers of the connected world. As IoT adoption accelerates, operators face a growing challenge in delivering seamless, cost-effective and scalable connectivity.

This report delves into the biggest pain points encountered by operators, including global connectivity management, regulatory compliance, security concerns and monetisation strategies. By understanding the challenges, operators can refine their strategies and position themselves for long-term success in the evolving IoT ecosystem.

Evolution to key enablers of the connected world

2000–2010: The M2M era

Mobile operators began their journey by exploring M2M communication, focusing on industrial and telematics applications. In its early days, the potential of M2M communication was not widely recognised. However, several forward-thinking mobile operators invested heavily in developing proprietary platforms to support M2M services, or relied on third-party monolithic platforms, laying the foundation for what would later evolve into IoT.

2010–2019: IoT proliferation

Realising the vast potential of IoT, operators intensified their investments and defined the role of mobile networks in the ecosystem.

This period saw the proliferation of IoT-driven applications, such as telematics powering usage-based insurance, and smart meters modernising national utilities. The convergence of IoT with digital technologies and cloud platforms unlocked new opportunities. IoT became a central pillar of 5G's future vision.

2020 to present: A dynamic IoT market

As IoT matures, the market is experiencing rapid growth and consolidation, particularly in areas such as connectivity services, equipment, and management platforms. At the same time, operators face challenges in monetising certain IoT use cases. As a result, the total addressable market for operator-led IoT is being constrained – both at the lower end, where smaller use cases struggle to scale profitably, and at the higher end, where cross-border IoT deployments require more advanced solutions. In response, some operators are re-evaluating their IoT strategies, reassessing their role in the value chain and exploring new business models to sustain competitiveness.

New entrants are also entering the IoT space, making use of advancements in technology and the groundwork laid by early adopters to offer innovative solutions and capture emerging market opportunities.

Plans for IoT among mobile operators

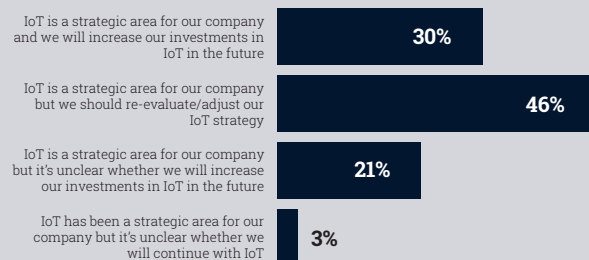
Half of operators are looking to re-evaluate plans

Based on GSMA Intelligence tracking of operator plans for IoT, **Figure 1** outlines how operators view their future:

- About a third are confident in their strategic choice to be in IoT and intend to keep investing in it in the future.
- Almost half think they should re-evaluate their strategies, despite being confident in their choice to be active in IoT.
- Around one in four appear less confident about continuing to invest in IoT or even continuing to offer it. ▶

Figure 1: Around half of operators are looking to adjust their IoT plans

How would you summarise your view and your plans for IoT? Percentage of respondents



Source: GSMA Intelligence Operators in Focus: Enterprise Opportunity Survey, December 2023



IoT challenges for mobile operators

Profitability of IoT connectivity

After about a decade in IoT, just over half of operators globally still offer connectivity-centric IoT. The rest have moved to services beyond connectivity. Overall, average revenue per user (ARPU) from IoT connectivity has been falling, with offerings as low as €1 per year (ARPU levels will depend on the market, application and operator).

Competition from MVNOs and IoT service providers is growing. Combined with typically high levels of network costs for operators, this has led to suppressed profit margins in IoT connectivity. As such, mobile operators offering IoT need to take advantage of any possible efficiencies in their technology stack (which often relies on legacy infrastructure) to bring their cost structure to lower levels.

Figure 2: More than half of operators still offer connectivity-centric IoT

Which technologies are part of your IoT offering?
Base: those network operators offering IoT services (from a total of 100)



Connectivity-centric IoT includes cellular connectivity (such as NB-IoT, LTE-M and RedCap) and non-cellular technologies (such as LoRaWAN or Wi-Fi). Includes operators with their own connectivity management platform.

Beyond connectivity IoT includes software application platforms, either operator-owned or via third parties, and integration services, in addition to IoT connectivity.

Source: GSMA Intelligence Operators in Focus: Enterprise Opportunity Survey, December 2023

Growing and retaining customers

While pursuing high-volume connection targets to combat declining ARPU, mobile operators are struggling to effectively serve customers with different needs and profiles. Specifically, their infrastructure and operations are not optimised for small IoT deployments, while a lack of global reach restricts their ability to support large international rollouts of IoT. This misalignment between operator capabilities and the needs of the market can lead to customer dissatisfaction and/or increased churn, ultimately constraining growth of market share.

Providing seamless IoT connectivity wherever needed

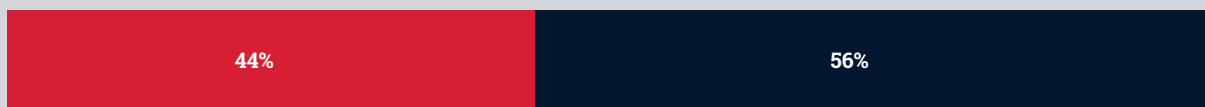
Mobile operators have traditionally focused on their home networks. With the rise of modern IoT use cases, operators are struggling to provide the same level of service outside their domestic footprints and in international markets. To service multi-country deployments, operators rely on roaming agreements with partner operators. However, these agreements may fall short in scenarios affected by privacy laws such as GDPR in Europe, or in countries that do not allow permanent roaming, such as Türkiye, Brazil and UAE.

Even in their own markets, operators could struggle to provide nationwide coverage. As an example, use cases in utilities, such as electricity meters, require nationwide coverage – yet most operators cover 80–90% of the required service area. Such limitations create significant challenges for operators aiming to support large-scale IoT deployments that need seamless connectivity. ▶

Figure 3: Enterprise adopters of IoT have highly diverse needs in terms of coverage

What are the network coverage requirements of your company's IoT deployments?

Percentage of enterprises. Base: those using, testing or planning to invest in IoT across a base of 4,200 enterprises, from 10 vertical sectors, with operations in 21 countries.



A single geographical area in a country
A city, district or limited area or a specific location such as a campus or factory

Other options
Coverage across multiple countries or continents

Source: GSMA Intelligence Enterprise in Focus: Global Digital Transformation Survey 2024



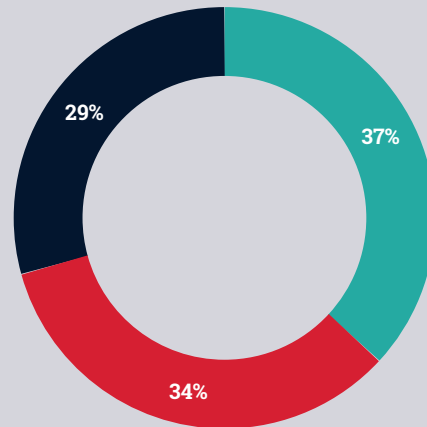
Integrating new technologies

The IoT landscape is evolving rapidly, presenting both opportunities and challenges for operators. Emerging technologies such as 5G RedCap and 5G NTN (satellite IoT) require major investments, while previous networks (2G, 3G, 4G-based IoT) still require support. Operators must balance innovation with backward compatibility.

Meanwhile, new standards such as eSIM SGP.32 are reshaping traditional customer retention models. The ability to switch operators over the air (OTA), without the need to 'touch' the device, could increase customer churn. To stay competitive, operators need to embrace these changes, realise the opportunity to unlock new revenues and fully harness the potential of IoT.

Figure 4: New SIM technologies gain ground
Percentage of global IoT connections using technology, 2030

Thinking about the global cellular IoT market (for example, the number of IoT devices/connections that use cellular networks such as 2G/3G/4G/5G or LPWA technologies), in your opinion what share of the total global number of IoT connections will be using eSIM or integrated SIM (iSIM) technology?



Source: GSMA Intelligence Operators in Focus: Enterprise Opportunity Survey December 2023

How operators can achieve success in IoT

Operators need a fit-for-purpose IoT connectivity stack

As with all IoT businesses, in order to succeed, operators need talented staff to build robust systems and design customised solutions. Management prowess is also essential to ensure the right opportunities are pursued.

Specific to operator success in IoT is having in place the right network assets in combination with business resources (summarised in **Figure 5**).

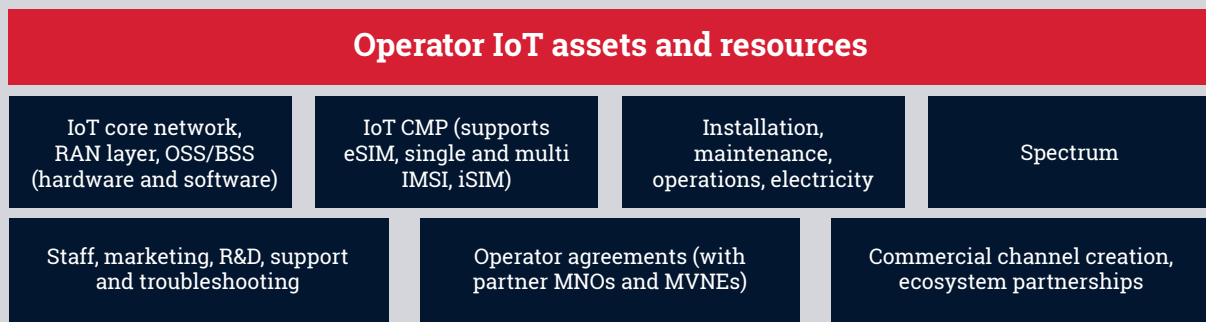
The business resources critical to operator success

include superior customer support, effective creation of commercial channels, ability to craft agreements with other operators (such as for roaming), and the ability to extend market reach through reselling network resources to mobile virtual network enabler (MVNE) partners.

Network assets (including the IoT core, RAN layer and billing system) should be fit-for-purpose, allowing operators to make best use of other, existing systems and enabling future integration of technologies.

To remain competitive and serve low-ARPU IoT use cases, operators also need to provide potential customers with self-service tools for onboarding and bill troubleshooting. ▶

Figure 5: Operator assets and resources required to deliver IoT



Source: GSMA Intelligence



The importance of the connectivity management platform

An essential component of an operator’s IoT stack is a connectivity management platform (CMP), which allows connection (SIM) provisioning, authentication and security. Some operators opt to build their own CMP, which typically requires significant investment to modernise legacy systems. Others opt for partner solutions. A mix of both options is also common, especially in cases where there are particular customer needs to fulfill.

The CMP acts as an abstraction layer on top of operator network systems. It is a core asset that helps operators design and manage the solutions they bring to market. The CMP directly impacts the value an operator can offer customers.

As the CMP directly affects the ability of operators to service all targeted markets and applications, its importance is heightened in a market challenged by connectivity technology fragmentation and operational challenges.

In addition to the CMP, further critical factors in terms of an operator’s IoT network assets are summarised in **Table 1**.

Table 1: Critical factors for fit-for-purpose IoT network assets

Factor	Implications
Uninterrupted, seamless, global coverage (including compliance and QoS)	<ul style="list-style-type: none"> Customers need continuous connectivity across regions. Compliance with roaming and privacy rules prevents service disruption. Customers can receive alerts in real-time. End users and other third parties involved can experience fewer disputes and fines.
A modern, scalable, cloud-based IoT core network platform	<ul style="list-style-type: none"> Customers require a scalable solution for global IoT expansion. Cloud-based platforms ensure reliability and easy integration. Automation and self-service reduce operational complexity. Strong security and compliance are essential.
Real-time visibility and control of connections across all areas of operation, with the ability to monitor data use and craft detailed customer-usage profiles	<ul style="list-style-type: none"> Customers need real-time monitoring to manage costs and prevent fraud. Usage analytics enables optimisation and proactive decision-making. Dynamic SIM management improves coverage and cost efficiency. Custom alerts help maintain uptime and security.

Source: GSMA Intelligence



Understanding IoT adopters: The voice of the enterprise

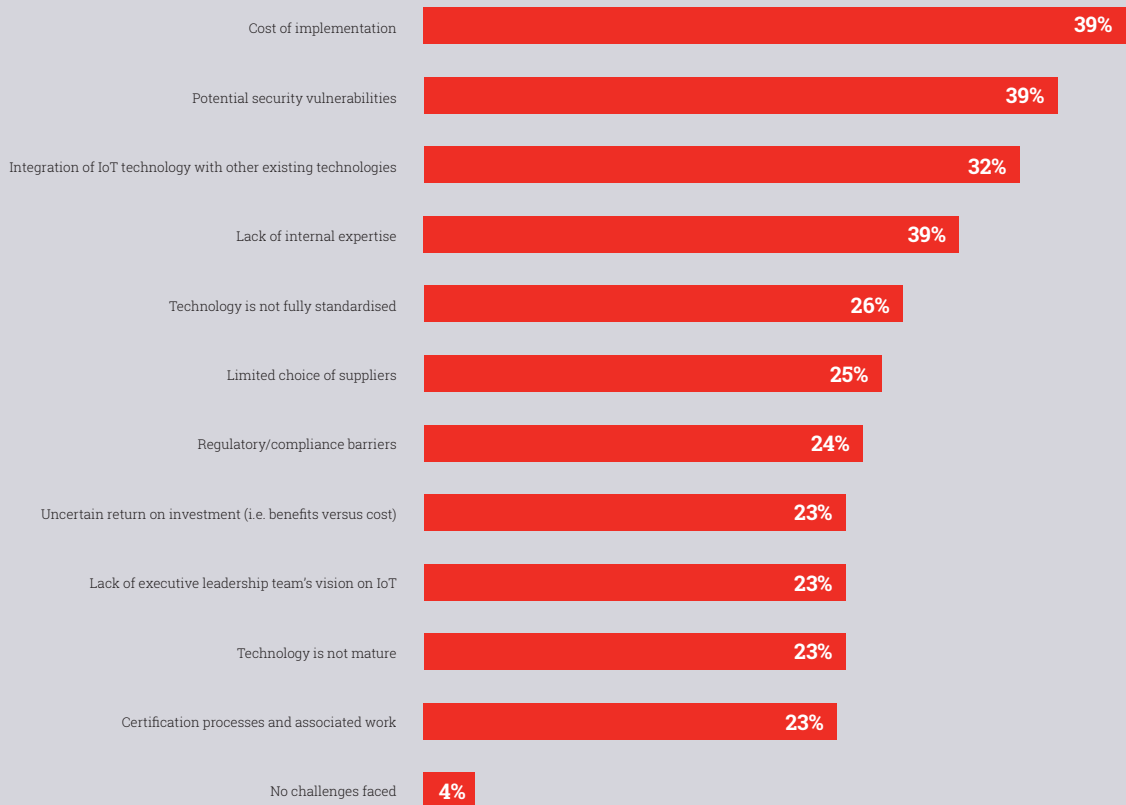
The operator role is key to facilitating adoption

To understand the views of enterprise adopters of IoT, GSMA Intelligence ran an extensive study with 4,200 enterprise buyers of digital and communication technologies at the end of 2024. The study covered enterprises from a number of verticals, from 21 countries across all regions.

Among enterprise adopters of IoT, cost of implementation was identified as the major deployment challenge. Meanwhile, security vulnerabilities and integration with existing systems were selected by around one in three respondents, and lack of internal expertise ranked as the fourth most important challenge. ▶

Figure 6: A range of challenges hinder IoT deployments

What are the IoT deployment challenges your company has faced or currently faces when deploying IoT technology?



Source: GSMA Intelligence Global Digital Transformation Survey

While operators are just one of many suppliers of IoT solutions to enterprises, their contribution is critical to facilitating IoT adoption.

Table 2 presents some of the standard practices among operators, and how these can have an impact on the challenges faced by enterprise IoT buyers. ▶



Table 2: How operators can help enable IoT deployments

Challenge to deploying IoT	Practices among operators	Adjustment required
<p>Cost of implementation</p>	<ul style="list-style-type: none"> Some operators require an IoT customer to commit to a minimum number of connections. However, this is inflexible and not suited to IoT, where deployments dynamically scale up and down in size. Some operators charge customers when the SIM is shipped, instead of when the connected device is activated (the period until activation could be up to 12 months). IoT customers operating in multiple countries may face unexpected roaming charges or lack support navigating local, data-related restrictions. 	<ul style="list-style-type: none"> Enable pricing of IoT based on customer data and service usage. Charge only when SIMs are activated. Ensure visibility of connections across any area and network of operation and troubleshoot effectively. Help customers navigate roaming and SIM options and align them with their needs and budgets.
<p>Potential security vulnerabilities</p>	<ul style="list-style-type: none"> Security vulnerabilities may lie away from the network, in the device and application levels, but can still cause damage. IoT customers need improved visibility and control of their IoT connections and may not be able to receive alerts quickly enough for security incidents. 	<ul style="list-style-type: none"> Procure secure platforms and invest in security capabilities for the IoT stack. Support VPN across multiple networks. Support custom access point name (APN) across multiple networks. Coordinate and cooperate with other IoT solution partners.
<p>Integration of IoT with existing technologies</p>	<ul style="list-style-type: none"> In most cases, integration with existing systems is the expertise of systems integrators, rather than operators. However, even connectivity solutions can require tailoring before handover. Limited ownership and control of the customer relationship can lead to poor customer service. 	<ul style="list-style-type: none"> Enhance customer-support functions and enable customer feedback mechanisms and remote monitoring of IoT project progress. Allow API integration with customer systems. Establish systems integrator partnerships or develop such capabilities.
<p>Lack of internal expertise</p>	<ul style="list-style-type: none"> Other IoT solution components may fall outside the remit of operators but can still affect the overall customer experience regarding connectivity service. Operators could be asked to assist customers with choosing connectivity modules or operating large fleets of devices. 	<ul style="list-style-type: none"> Develop a good understanding of device and module aspects to optimise for connectivity service. Provide customers with SIM/ device testing labs prior to deployment.

Source: GSMA Intelligence



The case for IoT deployments in automotive and utilities

Addressing vertical-specific needs

While the most significant IoT deployment challenges are common across industries, certain verticals have particular requirements that must be addressed too. These include the automotive and utilities sectors.

Both sectors require seamless domestic and global coverage, consistent service quality and simplified connectivity management. These are challenges that can exceed the capabilities of traditional operator models.

The automotive sector (encompassing vehicle manufacturers and sellers, as well as fleet operators) has critical requirements related to IoT, including:

- **seamless cross-border connectivity** – to ensure uninterrupted vehicle operation across different regions

- **real-time telematics and diagnostics** – to enhance vehicle performance, safety and predictive maintenance
- **OTA software updates** – to improve functionality, security and compliance with evolving regulations.

Meanwhile, for utility companies managing large-scale smart-metering deployments, IoT connectivity needs to support:

- **multi-regional smart meter deployments** – to ensure efficient and standardised data collection across locations
- **cross-border grid management** – to maintain operational stability and energy distribution efficiency
- **remote asset monitoring** – to enhance predictive maintenance and reduce operational costs
- **critical infrastructure management and regulatory compliance** – to meet industry standards and government regulations.

Customer scenarios for IoT operators

Scenario 1: Car manufacturer looks to ensure a unified experience across Germany and the US

A German car manufacturer provides connected vehicles that operate in multiple countries, including the US. The cars rely on seamless IoT connectivity for tracking, telematics, emergency assistance and infotainment. The manufacturer partners with a German mobile operator, which extends service abroad through roaming agreements with local mobile operators.

Car manufacturer challenges

- **Compliance with cross-border data transfer regulation.** Regulations regarding cross-border data transfers may pose restrictions on the storage and processing of data outside the borders of a country. For the car manufacturer, complying with GDPR is mandatory even when the cars operate in the US. Compliance with relevant US regulations is also a factor (for example, the California Consumer Privacy Act). Complying with different regulations adds complexity, while requirements such as sending the data back to Germany can cause delays and interruptions in IoT service.
- **Compliance with roaming rules.** IoT connectivity relies on roaming or permanent roaming (where a SIM card from one country is used to provide connectivity in another country on a long-

term basis). However, some jurisdictions can require local network agreements or impose restrictions on long-term use. While multi-IMSI and eSIM offer a solution to this challenge, they may not always be available from the operators or may not be compatible with the needs of car manufacturers.

- **Operational complexity.** The operator, based in Germany, must establish multiple roaming agreements with US operators to ensure nationwide coverage (as no single provider covers the entire country), or it may have to use local data centres for compliance. The car manufacturer must also certify its vehicles to meet US safety and environmental standards, often requiring operator support. Meanwhile, ensuring the onboard cellular device does not interfere with other spectrum users requires coordination with local spectrum authorities to prevent conflicts and optimise the use of radio frequency. ►



- **Consistent service quality.**
Relying on US partner networks reduces the German operator's visibility and control of service levels. Limited access to network logs and signalling can slow troubleshooting, making issue resolution dependent on US operators and potentially frustrating the car manufacturer.
- **Automotive-specific functions.**
Supporting functions such as eCall, telematics and infotainment across different countries requires consistent service and control of key features, to ensure minimal latency and no network service degradation, regardless of where the car is operating and the network used at the time.

IoT operator requirements

- **Regulatory compliance.**
The US and Germany have different data regulations. Ideally, the German operator would terminate data in the US while remaining compliant with local and EU laws. In Germany, data must stay within the EU. However, when a car moves to the US, personal data

is effectively transferred and must still be sent back to Germany for compliance.

- **Service level commitments.**
The car manufacturer expects consistent service quality (coverage, security, authentication, network speeds) in both Germany and the US. The German operator must uphold uniform servicelevel agreements regardless of location, to maintain customer satisfaction.
- **Profitability.**
Roaming agreements with multiple US operators increase costs for troubleshooting and service support, impacting profitability. Multi-IMSI SIMs can help, but the German operator would still depend on US-based partners for issue resolution. A local SIM (local IMSI) pricing model is more cost-effective for both the operator and the car manufacturer.
- **Flexible pricing.**
Both the German operator and car manufacturer need adaptable pricing models. Some IoT operators require enterprises to commit to a minimum number of SIM connections, but customised pricing structures may offer better business opportunities.

Table 3: Success metrics and KPIs

Roaming costs	Roaming entails added costs for both the car manufacturer and the IoT operator due to operational delays. The use of local IMSIs can lead to a reduction in the cost of roaming.
Deployment time	This should be reduced as much as possible. Completing local core integrations typically takes from a few weeks to a few months and should ideally be done within 4–6 weeks.
Latency	Optimum levels are determined by the use case – but, in general, latency should be minimised. Achieving sub-100 ms latency through local breakout points is possible.
Customer satisfaction	Customer satisfaction can be measured using a Net Promoter Score (NPS) on a scale of 0 to 10 (or 0% to 100%), reflecting the likelihood of customers recommending the service. A score of 9 or 10 is the target. Additional metrics to consider include the number of complaints regarding coverage issues and time spent on troubleshooting.
Uptime and performance	This measures adherence to service levels. The target should be to have few service interruptions and minimal downtime.

Source: GSMA Intelligence

Scenario 2: Automotive service provider looks to support VoLTE and eSIM

An automotive service provider (ASP) offers telematics, infotainment and connectivity-enabled hardware to automotive companies. It aims to expand its services globally, providing data as well as voice, including VoLTE for emergency calls and in-car assistant services. It also offers eSIM and seeks to avoid being locked into specific mobile operators – though still looks to maintain partnerships with them.

ASP challenges

- **Coverage** in all areas of operation. Even where the ASP relies on one mobile operator for connectivity service within a country, the operator might not offer sufficient coverage across all areas needed. This issue is further exacerbated when the ASP needs to service

multiple countries. Essentially, they would have to be customers of all the operators involved

- **Availability of automotive-specific services.** Lack of network coverage is not the only issue for the ASP; they need to ensure the mobile operators they are buying connectivity from also offer the required eSIM and voice services. Specifically, the operator needs to support the new eSIM standard SGP.32 for IoT, and at the same time offer IoT for emergency calls (typically mandated by regulations) and in-car assistant services.
- **Complex billing.** In a connected car, telematics, voice calls, emergency calls and infotainment are different services with different usage needs, in the form of data, messages and voice, and pricing. Ideally, the ASP would be able to bill and invoice all services accurately in a simple way. Typically, operator billing systems are not supportive of flexible IoT pricing models, and accurate billing is particularly challenging when dealing with multiple mobile operators. ▶



ASP requirements

Telematics and data collection

- Real-time monitoring of vehicle diagnostics and predictive maintenance.
- Secure transmission of performance data to cloud infrastructure.
- High-bandwidth connectivity for OTA updates.

Infotainment and digital services

- High-speed internet access for navigation, music streaming and communication.
- Seamless integration with smartphones and personal devices.
- Dedicated connectivity for in-car app ecosystems.

Security and privacy

- End-to-end encryption for vehicle data security.
- Secure network access for software updates and systems integration.
- Compliance with global standards for automotive cybersecurity.

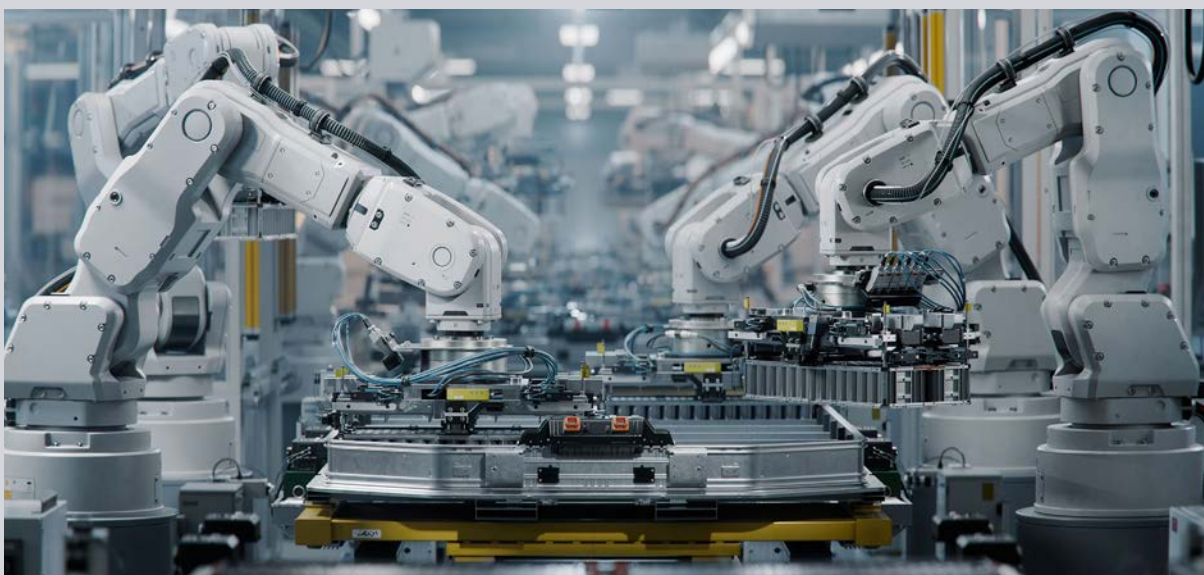
IoT operator requirements

- **Seamless global connectivity.** The mobile operator (with the ASP as its customer) needs to be able to offer global connectivity through a combination of the following: roaming agreements with certain mobile operators; use of local networks and local SIM profiles where roaming is cumbersome or costly; and potential use of eSIM services, specifically multi-IMSI support on eUICC (standards SGP.22 and SGP.32). To best manage these technologies, a 'single pane of glass' CMP aggregating platform is needed.
- **Integrated services.** The mobile operator needs to have an integrated solution for voice services (ideally supporting VoLTE).
- **Accurate billing across services and networks.** The mobile operator should be responsible for the billing of all services. To do this, it should have split billing between the different service providers (for infotainment, eCall, telematics) and be able to monitor use of the network in real-time, regardless of geography. ▶

Table 4: Success metrics and KPIs

Integration time	This refers to the time needed to integrate with the various operator networks, which should be as short as possible. Where different operators use different connectivity management platforms, API integration is needed for them to be managed centrally.
Lead time	Lead time refers to the period of deployment until connectivity is delivered/provisioned. It should be reduced as much as possible. It is significantly affected by the time needed for integration with other networks.
Billing accuracy	If billing is not accurate, issues can emerge for the mobile operator, ASP and automotive client. These include overcharges, missed payments, lower levels of customer satisfaction and customer churn.
Longevity of the solution	For the ASP, it is important to avoid operator lock-in and be able to offer all relevant services (voice, data, telematics, infotainment). Ease of management of the processes involved is critical to ensure longevity.

Source: GSMA Intelligence





Bayobab: a customer case study from floLIVE

Background

The rapid growth of IoT adoption in Africa and the Middle East has created an urgent demand for seamless, scalable and compliant connectivity solutions. MNOs and MVNOs are increasingly looking for innovative partnerships to expand their IoT capabilities and unlock new revenue streams.

Bayobab, a wholly-owned subsidiary of **MTN Group**, is a leading pan-African digital connectivity provider focused on bridging the region's digital divide through strategic infrastructure investments. With 83% of its planned 135,000-kilometre fibre network already deployed, Bayobab plays a critical role in enabling IoT expansion across Africa and beyond.

Bayobab and **floLIVE** share a deep understanding of the unique connectivity challenges in Africa. Both companies are committed to delivering scalable solutions that empower businesses with seamless IoT connectivity while navigating the region's complex regulatory landscape. Their strategic partnership enables enterprises and service providers to deploy IoT devices with low latency, local compliance and expanded reach across Africa and the Middle East.

Bayobab is a leader in providing connectivity and next-generation digital solutions across its African footprint. With investments in subsea and terrestrial cable networks, as well as communication platforms, Bayobab is focused on fulfilling its mission to bridge the digital divide on the continent. With a view to offer innovative products and services, Bayobab collaborates with organisations that can amplify its scale and multiply its extensive reach. As such, Bayobab uses floLIVE's advanced IoT core network, connectivity management platform, packet gateway for local breakout, and connectivity solutions utilising IMSI ranges to expand its IoT reach, scale its services and unlock new revenue opportunities. floLIVE plays a dual role in this partnership, serving as Bayobab's IoT platform and managed service provider while also enhancing connectivity options for global customers. By integrating Bayobab's IMSI range with floLIVE's extensive IMSI library, floLIVE enables its global customers to access seamless, multi-network and multi-country connectivity solutions across these regions. Given the vastness of the continent, there is a need to rely on a combination of IMSIs on the same SIM to deliver seamless switching. Bayobab trusts floLIVE to deliver at scale, creating a smart, future-proof IoT solution.

This strategic alliance strengthens both companies' market positions, providing enterprises with a highly flexible IoT ecosystem tailored to their needs.

Bayobab's business impact

- 70% reduction in infrastructure costs by switching to a cloud-based model.
- 100% increase in the new revenue through IMSI monetisation and wholesale expansion.
- Faster go-to-market with seamless onboarding and API-driven integration.
- Expanded IoT reach into previously unreachable African markets.

The challenge: scale and speed

As Bayobab is rooted in partnerships, a collaboration with floLIVE allows it to expand on its IoT efforts and create a rapidly scalable solution to resolve key challenges:

1. **Scale at speed**
 - In order to scale quickly and decrease time to market, Bayobab required a partner to rapidly initiate an IoT solution.
 - floLIVE provided an IoT platform with core network, connectivity management and billing to provide operational efficiency.
 - In a bid to future proof its products and services, Bayobab needed an IoT platform that could scale with growing demand, handle millions of connected devices, and support emerging 5G use cases.
2. **Unlocking new revenue streams**
 - A growth in enterprise demand presented an opportunity for increased revenue.
 - With extensive coverage in Africa and the Middle East, Bayobab was well-positioned to leverage IoT monetisation opportunities for existing and new customers and markets.
3. **Compliance and data security**
 - Expansion into new markets challenges MNOs operationally – for example, navigating local regulatory frameworks, data residency laws and security concerns.

The solution: how floLIVE and Bayobab partnered for IoT success

Bayobab partnered with floLIVE, leveraging its fully managed, cloud-native IoT platform to unlock new opportunities and streamline operations. This strategic collaboration expanded on Bayobab's reputation as a leading connectivity provider in Africa and the Middle East, while accelerating time-to-market for its IoT solutions. ►



1. **Accelerating IoT deployment**
 - Cloud-based IoT core and managed services – Allowed Bayobab to leverage the IoT services and not extend its existing infrastructure.
 - Faster time-to-market – Enabled Bayobab to focus on customer acquisition.
2. **Expanding global IoT coverage with multi-IMSI and local breakout**
 - Global IMSI library – Integrated Bayobab's IMSI into floLIVE's global IMSI library, allowing other floLIVE customers to benefit from it.
 - Multi-network roaming and local breakout – Provided low-latency, locally compliant IoT connectivity using floLIVE's PGW.
 - Improved coverage in previously untapped markets – Enabled Bayobab to serve new IoT markets without using its own infrastructure investments, which are geared towards rolling out connectivity across the continent.
3. **Ensuring compliance and optimising IoT signalling costs**
 - Regulatory compliance and data residency – Simplifying legal compliance across multiple markets by using global IMSI, multi-IMSI, eUICC SIM and multi-network connectivity without violating roaming policies such as permanent roaming local regulations and ensuring adherence to data privacy requirements.
4. **Secure, encrypted IoT data routing – Ensured compliance with global security standards.**
4. **Seamless API-driven integration**
 - Single API for full IoT management – Simplified customer integration.
 - Simplified MVNO onboarding – Enabled quick provisioning and activation.
 - One-stop shop for IoT connectivity – Allowed Bayobab to rapidly launch and scale IoT offerings.
5. **Unlocking new revenue streams through IMSI monetisation**
 - Bayobab IMSI available for global roaming – Monetised its IMSI range, creating new wholesale revenue opportunities.
 - Competitive pricing for IoT connectivity – Enabled better pricing options within regions that had previously proved challenging.
6. **Future-proofing IoT for 5G and next-generation deployments**
 - Cloud-native architecture for future scalability – Ensured long-term growth potential.
 - 5G-ready infrastructure – Enabled seamless evolution for smart cities, automotive and industrial IoT.
 - Support for private networks and enterprise IoT growth – Augmented Bayobab's positioning for high-value enterprise use cases.

How does this compare to traditional MNO/MVNO approaches?

Challenge	Traditional MNO approach	floLIVE and Bayobab approach
Infrastructure costs	High capex investment	Cloud-based, pay-as-you-grow model
Global IoT expansion	Complex roaming agreements	Multi-IMSI and local breakout
IoT monetisation	Limited revenue options	IMSI monetisation and wholesale IoT
Compliance risks	Regulatory complexity	Built-in compliance solutions
Scalability	Limited by legacy systems	Cloud-native, 5G-ready platform

Conclusion

The collaboration between Bayobab and floLIVE addresses Africa's connectivity challenges with a strategic combination of local IMSIs, local breakouts and seamless multi-IMSI switching. This enables automotive and telematics – the next-generation

connectivity applications of Africa – to function with constant monitoring and real-time communication. As demand for video applications increases, low-latency solutions will become essential, and Bayobab and floLIVE are committed to leading this transformation. ■



About Bayobab

Inspired by Africa's iconic Tree of Life, Bayobab is committed to providing next-generation digital solutions across the continent. Just as the roots of the baobab tree merge into a single, powerful trunk, Bayobab connects Africa by converging strategic global and local partnerships to work in harmony. Bayobab is a pan-African digital connectivity solutions company and a trusted gateway to the African continent. Through technology and innovation, we deliver reliable, open, next-gen digital

solutions that bridge Africa's digital divide.

Our two business lines, Bayobab Fibre and Bayobab Communication Platforms, work behind the scenes to ensure secure, reliable, and high-performance connectivity across Africa and beyond. From ensuring the highest levels of availability and encryption to enabling seamless global communication, we empower our customers to connect safely from anywhere in the world.



About floLIVE

floLIVE empowers Mobile Network Operators (MNOs) and Mobile Virtual Network Operators (MVNO) with a unique, comprehensive IoT connectivity solution that redefines global cellular services. By providing a carrier-grade Connectivity Management Platform (CMP) over the cloud, floLIVE simplifies IoT operations and enables seamless integration with other CMPs, serving as a true aggregator.

floLIVE's self-service portal caters to the Subscription Management (SM) market, empowering customers with full visibility and control. With eSIM support (SGP.32), floLIVE offers flexible, future-proof solutions that simplify the deployment of IoT devices globally.

With a rich set of connections with MNOs worldwide, floLIVE offers unmatched coverage augmentation, delivering low-latency, high-performance connectivity across borders. The company's global infrastructure, including PGW-as-a-service, optimizes IoT performance with local breakouts that ensure compliance with national and regional mandates.

As a cost-effective, managed service solution, floLIVE ensures that MNOs and MVNOs can deliver scalable IoT services to their enterprise customers while minimizing operational complexities. Backed by industry-leading technology investors, floLIVE's multi-IMSI SIM solutions enable partners to achieve faster time-to-market, simplified logistics, and superior connectivity that drives better business outcomes.



The GSMA is a global organisation unifying the mobile ecosystem to discover, develop and deliver innovation foundational to positive business environments and societal change. Our vision is to unlock the full power of connectivity so that people, industry and society thrive. Representing mobile operators and organisations across the mobile ecosystem and adjacent industries, the GSMA delivers for its members across three broad pillars: Connectivity for Good, Industry Services and Solutions, and Outreach. This activity includes advancing policy, tackling today's biggest societal challenges, underpinning the technology and interoperability that make mobile work, and providing the world's largest platform to convene the mobile ecosystem at the MWC and M360 series of events.

We invite you to find out more at [gsma.com](https://www.gsma.com)



GSMA Intelligence is the definitive source of global mobile operator data, analysis and forecasts, and publisher of authoritative industry reports and research. Our data covers every operator group, network and MVNO in every country worldwide – from Afghanistan to Zimbabwe. It is the most accurate and complete set of industry metrics available, comprising tens of millions of individual data points, updated daily.

GSMA Intelligence is relied on by leading operators, vendors, regulators, financial institutions and third-party industry players, to support strategic decision-making and long-term investment planning. The data is used as an industry reference point and is frequently cited by the media and by the industry itself.

Our team of analysts and experts produce regular thought-leading research reports across a range of industry topics.

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