

## Get ready for the new eSIM reality

What mainstream consumer eSIM adoption means for connectivity providers

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The deployment of consumer eSIM has reached a pivotal moment for mobile operators. What was once a niche differentiator is now becoming standard, shifting the battleground from technology adoption to user experience, operational excellence, and new business models. The worldwide study conducted during summer 2025 by Kaleido Intelligence for IDEMIA Secure Transactions (IST)<sup>1</sup> among MNOs, MVNOs and MVNEs reveals that:

- ➔ **87% of operators have deployed consumer eSIM commercially but nearly half of them still question the efficiency of their current onboarding journey**
- ➔ **73% consider georedundancy and high-capacity crucial within 3 years**
- ➔ **43% see a need for enhanced fraud and risk-management capabilities**
- ➔ **Travel eSIM, digital-first channels, and business partnerships fuel eSIM business growth**

Here are the main insights to successfully adapt your strategy to this new connectivity paradigm in which eSIM reshapes operating models, product strategy and partner ecosystems.

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## Shift from QR codes to seamless eSIM activation methods

Although 74% of MNOs, MVNOs, and MVNEs report generally positive customer experiences with eSIM activation, close to 50% still question the efficiency of their onboarding journeys. This paradox stems from the fact that, while most providers have digitized eSIM onboarding, **QR codes remain the dominant activation method** (used by approximately 54% of the market). To eliminate manual steps, reduce errors, and lower support costs, **the next phase is entitlement- and app-led activation** (including deep link for Android and Universal Link for iOS). Supporting all activation methods, IST solution directly integrates with all eSIM discovery services in the consumer market today. It minimizes integration efforts to unlock seamless, fully digital eSIM onboarding experiences.

## Ensure multi-device support flawlessly

With eSIM-enabled devices expanding beyond premium segments, **operational excellence** becomes critical for connectivity providers and **optimizing device compatibility** emerges as a priority. In our study, 43% of MNO and MVNO respondents cite inventory management across different device types and capabilities as a key challenge in their eSIM rollout, while 47% of MVNEs highlight the complexity of managing customizations and profile compatibility across partners. This is where **dynamic profile adaptation**, allowing to match device types and capabilities in real time during

eSIM activation, can give you a competitive edge.

## Invest in high-capacity, resiliency and data sovereignty

In our study, **geo-redundancy and high-capacity** shift from a minor priority today, noted by just 18% of respondents, to a key focus for 73% of mobile operators within 3 years. As consumer eSIM becomes mainstream, system architecture will need to **withstand traffic spikes, handle failover scenarios**, and, in some cases, **support multi-regional deployments**. Carefully designed public or private cloud deployments emerge as the most effective and secure approach to ensure high service availability and capacity while complying with local **data sovereignty requirements**.

## Modernize legacy systems

Even so, experience shows that deploying a high-performance eSIM management platform cannot be separated from **broader modernization of legacy systems**. Systems such as BSS and OSS must evolve to support fully digital onboarding processes, or they will ultimately limit the scalability, automation, and customer experience gains that eSIM platforms are built for.

## Optimize eSIM profile inventory

For connectivity providers, moving from physical cards to digital profiles lowers logistics cost but introduces **digital inventory complexity**: more Stock Keeping Units (SKU), more device variants, and multichannel distribution all add new operational challenges. A fully **digital eSIM profile ordering process** is seen as a prerequisite by over 60% of MNOs and MVNOs, and nearly 90% of MVNEs. Yet digital ordering alone is not sufficient: eSIM profile inventory must be actively monitored and planned. Connectivity providers need **proactive, data-driven inventory strategies** to avoid shortages while preventing costly unproductive stock. AI-powered inventory management is emerging as a critical capability for cost-effective eSIM operations, enabling real-time visibility, predictive planning, and **optimized ordering decisions** to protect both customer experience and cash flow.

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## Prevent eSIM profile obsolescence

Preventing eSIM profile obsolescence is also a key concern for over 30% of MNOs. The ability to match profiles to device capabilities at download, and to update or recycle profiles rather than discarding them, becomes increasingly important as consumers upgrade to new devices.

## Protect eSIM revenues against fraud

Over 40% of MNOs/MVNOs and close to 60% of MVNEs express the need for fraud protection and risk management capabilities. New patterns, including subscription fraud, SIM misuse or SIM swap, demand **stronger eKYC and AI-based detection** to protect both domestic and travel eSIM businesses. Advanced analytics and monitoring capabilities provided by IST can help you identify eSIM lifecycle anomalies and reveal suspicious download patterns that traditional monitoring cannot detect.

## Accelerate eSIM growth with partner-friendly solutions

Consumer eSIM lowers barriers for digital-first sub-brands, MVNOs, and non traditional channels. Growth, spearheaded by travel eSIM, will be driven by **new distribution models and ecosystem partnerships** across sectors such as banking, airlines, hospitality, cultural venues, and VPN services. Reflecting these new market dynamics, 70% of MNOs and over 80% of MVNOs/MVNEs highlight the need for **advanced management and customization capabilities to support partners, resellers, and distributors**. Flexible eSIM solutions that support a variety of use cases and enable fast time to market with partners will be strategic to capturing market share and sustaining growth as competition and pricing pressure intensify.

## How to succeed: key takeaways

As eSIM becomes the default mode of connectivity, success now comes from executing flawlessly at scale, securing platforms against fraud, and embedding connectivity into the broader customer journey. It depends on frictionless activation, modernized systems, and resilient, secure platforms. The comprehensive eSIM solution designed by IDEMIA Secure Transactions makes it possible. Whether you are driving the eSIM deployment or business strategy at an MNO, MVNO or MVNE, it provides **the operational efficiency, business scalability and future-proof security you need**.

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<sup>1</sup> Online survey with 178 MNO, MVNO, and MVNE participants and interviews conducted by Kaleido Intelligence in summer 2025

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