# Modern Entitlement Servers

## Flexible, Scalable, Future-Ready



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Entitlement servers have evolved from mere back-end components into a strategic enabler for customer experience, facilitating seamless service activation across devices. In today's digital era, deploying a modern entitlement server is no longer an option; it is essential for survival and growth.

In the fast-evolving landscape of telecom, communications service providers (CSPs) are actively pursuing three key objectives to stay competitive in a rapidly changing digital terrain:

Unlocking new revenue streams

Expanding their connected device ecosystems

Enhancing customer experience (CX)

### AT A GLANCE

#### WHAT'S IMPORTANT

**Cloud-based entitlement servers enable seamless service activation, eSIM provisioning, and advanced services such as RCS, VoWiFi, VoLTE give CSPs the agility to innovate, scale, and deliver consistent multi-device experiences that outperform legacy systems in flexibility and performance.**

## The future of telecom is seamless – with entitlement server as the unsung hero of the connected experience

In the fast-evolving landscape of telecom, communications service providers (CSPs) are actively pursuing three key objectives: unlocking new revenue streams, expanding their connected device ecosystems, and enhancing customer experience (CX) to stay competitive in a rapidly changing digital terrain. While CSPs are laser focused on adopting breakthrough technologies like 5G, IoT, edge computing, and eSIM to set themselves apart, one critical piece is often overlooked – the entitlement server. This essential platform equips CSPs to provision services seamlessly, improve CX, and create new monetization opportunities.

For customers, what sets a provider apart is the ability to deliver an out-of-the-box solution that simplifies onboarding, service activation, managing, and deactivating services.

Traditionally viewed as a back-end network element, the entitlement server has transformed with the digital age into a strategic customer-facing asset that ensures streamlined activation and management of services across a myriad of devices – from smart phones and wearables, to tablets, and IoT sensors. In today's hyper-connected world, where customers expect services to work at a click of a button, a modern entitlement server is not an optional add-on; it is a vital part of CSPs' ecosystem.

## The telco trilemma: balancing CX, monetization, and agility

### Customer experience imperative

CX is a top priority for telco executives. IDC research highlights that the success of a digital transformation hinges on the CSP's ability to adapt to evolving consumer and enterprise needs. For customers, what sets a provider apart is the ability to deliver an out-of-the-box solution that simplifies onboarding, service activation, managing, and deactivating services. However, CSPs struggle to address this requirement in complex scenarios such as,

- **eSIM provisioning** requires entitlement checks, seamless profile transfer, and activation without QR codes for a smooth user experience. As adoption rises with more OEMs supporting eSIM-enabled phones and IoT devices, the demand for customized and secure life-cycle management will surge.
- **eSIM transfer between devices**, especially cross-OS (Apple to Android and vice-versa), are complex and error-prone, demanding SMS-OTP verification and temporary token-based authentication. Additionally, CSPs must tie together device-specific configurations and develop device-agnostic workflows.

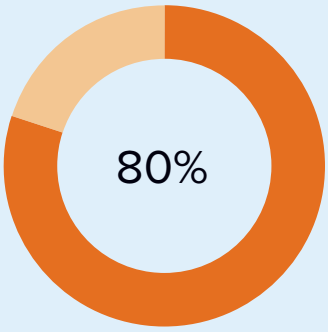
### Monetization challenges

CSPs have long relied on traditional revenue streams, and are now venturing into 5G, rich communication services (RCS), satellite, and IoT to monetize differentiated services. Success depends on close coordination between multiple domains such as, SM-DP+ server for eSIM, business support system (BSS) for subscription plans, operations support systems (OSS) for service provisioning, and the websheet server for activation and service management to build a competitive product portfolio.

- **RCS enablement**: With Apple extending support for rich communication services (RCS), IDC research shows that enterprises are increasingly including it in their CPaaS strategies to enhance customer interactions through advanced chat and media features.
- **5G standalone (SA) and network slicing**: As CSPS rapidly deploy 5G network, the focus has shifted to monetization. 5G SA and network slicing is not just a network capability – they underpin new metered and use-case-based offerings. Device entitlement logic must align with application-level traffic policies to unlock new revenue streams.

### Rapid technological advancements

The changing telecom landscape requires continuous integration to keep pace with new specifications like GSMA TS.43, and SGP .32 (eSIM for IoT), and updates to standards such as GSMA SGP (SM-DP+) and Apple's proprietary Magnolia, Sycamore, and Tremblant entitlements frameworks. Entitlement servers must have the capability to handle OS upgrade workflow (like server discovery for Apple's Ledger Server), manage error and fraud in multi-step entitlement processes, and state drift between SM-DP+ server and BSS.




Over 80% of CSPs already have agreements with satellite operators, and of those, over 35% intend to offer direct-to-device connectivity.

- **Device proliferation**: From Apple's e-sync to Android's GSMA TS.43, each OEM introduces proprietary application programming interfaces (APIs) and activation workflows. CSPs need a mediation layer that abstracts these differences and enforces consistent policies across diverse devices.
- **Satellite**: IDC's APAC Enterprise Connectivity and Telecom Services Survey 2024 survey indicates that over 80% of CSPs already have agreements with satellite operators, and of those, over 35% intend to offer direct-to-device connectivity. As CSPs venture into satellite to-device connectivity, they need to build and integrate terrestrial and satellite entitlement architectures to support provisioning across both domains.

However, the reality is that not every CSP is able to reap the benefits of entitlement servers. CSPs are hindered by outdated provisioning systems, and siloed device onboarding flows, and are still relying on manual interventions, often resulting in workarounds and service delays.

## The legacy trap

Many telcos are shackled by entitlement servers designed for simpler implementations and state-based workflow orchestration.

### Complex and rigid service provisioning

Legacy entitlement servers are characterized by static provisioning logic and rigid integrations across BSS/OSS, OEM endpoints. This results in fragmented policies and integration complexity. This is compounded by limited scaling and elasticity as capacity is based on the available hardware. Additional challenges include geo-redundancy, hardware refresh cycles and increased regional outage risk. Vendor lock-in traps operators in inflexible ecosystems, suppressing innovation with

OEMs and new SM-DP+ providers, and inflating total cost of ownership (TCO) for hardware and software. Legacy entitlements are CR-driven where feature upgrades require extended integration and implementation time for each vendor or OEM upgrades.

These inflexible architectures delays deployments, slow innovation, inhibit responsiveness, and block seamless service delivery in today's dynamic, multi-device ecosystems.

### Fragmented customer journeys

Legacy entitlement servers lack a centralized layer, with business logic spread across BSS, customer relationship management (CRM) and device apps in siloes. This leaves customer care isolated from network and service-enabling systems and ties every OEM update or new use case to a lengthy CR-driven cycle. The result: integration errors, manual troubleshooting, and breaks in the customer experience at every touchpoint.

### Multi-tenant gaps

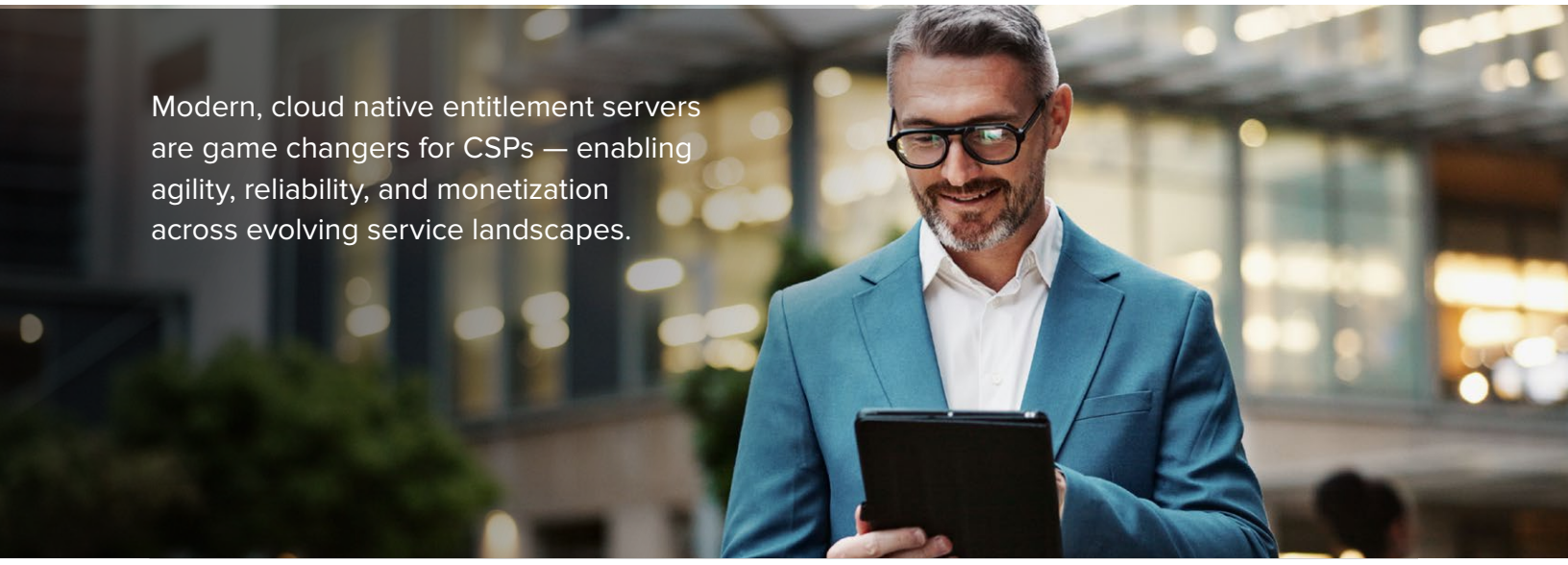
Legacy entitlement servers were not built for multi-tenancy. Their monolithic designs enforce uniform entitlement logic, policies, and branding on every subscriber, limiting their growth. This leaves mobile virtual network operators (MVNOs) and sub-brands unable to define custom policies or offer unique bundles to differentiate themselves in the market. MVNOs require front-end changes for branding and must overcome inconsistencies in UI with fragmented back-end systems.

CSPs today face significant challenges due to legacy entitlement server platforms that cannot orchestrate modern workflows, rely on rigid integrations that slow every launch, and operate on change-request–driven cycles that lead to higher costs and delays in time-to-market. CSPs must strategically opt for modern cloud-based entitlement servers that offer agility, scalability, and faster innovation.

## Modern entitlement server – a strategic growth enabler

Modern, cloud native entitlement servers are game changers for CSPs—enabling agility, reliability, and monetization across evolving service landscapes.

- **Cloud-native entitlement servers offer elasticity** to support millions of subscribers and



accommodate dynamic traffic demands, relying on the fact that they are not limited to being based on available hardware.

- **Cloud-based architecture delivers automated deployments**, seamless feature rollouts with minimal downtime, and automates updates—shifting from CAPEX-heavy on-premises infrastructure to an OPEX-driven, cost-efficient model.
- **Such an architecture supports fully configurable, end-to-end activation flows**, such as eSIM provisioning, companion device pairing, and advanced network services such as RCS, VoLTE, VoWiFi – all working out-of-the-box. This aids real-time error resolution, fosters intuitive provisioning, drives CX improvements, and boosts user stickiness through seamless upsell and cross-sell opportunities.

Telco executives rank operational agility and speed to market as top priorities, according to IDC survey on the digital transformation of CSPs.

- **Entitlement servers bridge multi-vendor interoperability and standardization gaps** by integrating OSS, BSS, and the broader network. This accelerates service deployment and reduces time-to-market.
- **Modern entitlement servers help CSPs unlock new revenue streams** from RCS bundles, and 5G slicing monetization through activations from 5G NSA to SA, 5G slice access per device, and metered pricing for application-specific entitlements. Additionally, CSPs can tap onto alternative revenue streams in the enterprise space through entitlements for mobile device management (MDM), scalable device onboarding, multi-carrier profile management, global roaming orchestration for IoT/M2M connectivity, and satellite connectivity through seamless integration of features, devices, and systems.
- Leveraging a modular approach allows CSPs to adopt new GSMA specifications and new OEM configurations quickly. Modern cloud-native entitlement server delivers on scalability and elasticity to accommodate dynamic traffic demands and a growing diversity of end-user devices such as smartphones, and wearables. CSPs will benefit from accelerated update cycles as new entitlement capabilities can be developed, tested, and deployed faster, keeping pace with evolving service requirements and competitive pressures.
- Modern solutions take a product-led approach, unlike the legacy CR-driven (change request) model. With modular solutions and CI/CD pipelines, new services and capabilities can be rolled out much faster, avoiding lengthy, custom integration cycles. This agility ensures alignment with continuous OEM and GSMA updates (e.g., GSMA TS.43, SGP.32), delivering a clear competitive edge.

Apple's recent rollout of MVNO entitlement capabilities provides a level playing field for MVNOs to deliver premium Apple device experiences such as RCS messaging, satellite connectivity, cross-OS SIM transfers, companion wearables, 5G activation, FaceTime, and iMessage while retaining control over subscriber entitlements and service packages. But without a modern, cloud-native entitlement server that integrates Apple's workflows, orchestrates these complex activation flows, and enforces policy, MVNOs will face technical obstacles, and will be unable to seize this opportunity.

## The path forward – need for urgent action

CSPs are at an inflection point. What began as a simple network element, the entitlement server has matured into a pivotal, customer-facing platform that powers seamless experiences, accelerates innovation, and opens fresh revenue streams. Delaying its modernization puts CSPs at risk of ceding the competitive advantage and customer loyalty to more agile rivals.

To thrive, CSPs must embrace cloud-native entitlement servers. Selecting the right modern entitlement server is just the beginning; success hinges on evaluating the solution against these criteria:

CSPs are actively pursuing initiatives to move workloads to the cloud. Cloud-native entitlement servers offer elasticity to support millions of entitlements with geo-distributed availability and built-in redundancy.

- **Agility and flexibility**: Telco executives rank operational agility and speed to market as top priorities, according to IDC survey on the digital transformation of CSPs. Look for platforms with embedded workflow engines capable of handling complex business logic and adapting swiftly to new OEM and GSMA standards (e.g., TS.43, SGP.32) without costly custom integration. A product roadmap that supports frequent updates minimizes deployment risks and future-proofs investments.
- **Scalability and cost efficiency**: IDC's research highlights that CSPs are actively pursuing initiatives to move workloads to the cloud. Cloud-native entitlement servers offer elasticity to support millions of entitlements with geo-distributed availability and built-in redundancy. The as-a-service model reduces heavy capital expenditure with pay-per-use billing, and accelerates time-to-market. Built-in security features also help detect and prevent eSIM fraud, and unauthorized provisioning, safeguarding both average revenue per user (ARPU) and brand integrity.
- **Enhanced CX**: Modern entitlement servers condense multi-step workflows into prompts that require few taps to enable on-device activation journeys for eSIMs and companion devices. It orchestrates entitlement checks, proactively manages errors which drastically reduces failure rates and supports tickets. Superior UX translates into lower churn, and higher uptake of premium services as the overall experience is frictionless, leading to customer satisfaction.

- **Rapid evolution and futureproofing**: Transitioning from legacy to cloud-native entitlement servers should include end-to-end migration support. Modular SaaS solutions with CI/CD pipelines enable faster rollout of new services and capabilities—bypassing lengthy, change-request-driven cycles. This capacity for continuous innovation positions CSPs to respond rapidly as standards and expectations evolve.
- **Robust integration and certification support**: Beyond migration, vendors must provide hands-on support during integration and certification, ensuring seamless alignment with evolving OEM frameworks (e.g., Apple) and GSMA standards. This capability minimizes integration errors and reduces costly manual troubleshooting, a common pain point in legacy systems.

CSPs must act now by choosing a cloud-native entitlement platform built for agility and flexibility, one that seamlessly integrates functionalities to deliver differentiated services, enhances customer journey, creates new revenue opportunities, and stays relevant in a competitive digital world.

## About the IDC Analyst

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Swathi Arunaa works in IDC Asia/Pacific Telecommunications practice, supporting its research and client engagement activities across Asia/Pacific markets. In her role, Swathi works with the regional telecom team to produce syndicated research that analyzes trends and developments, technology buying patterns, market sizing, and segmentation.

More about Swathi Arunaa

## Message from the Sponsor

Amdocs' modern Entitlement Server (ES) is at the core of our award-winning eSIM Cloud, with more than 40 global deployments supporting leading CSPs. The ES enables seamless entitlement and provisioning for devices and services, including wearables, tablets, VoLTE, VoWi-Fi, and 5G. Built as a cloud-native SaaS, the Amdocs eSIM Cloud ensures CSPs can manage rapid device proliferation and evolving OEM requirements with agility.

Recent expansions include integration with Google's Configuration Server (ACS) to support RCS, VoIP, and VoWi-Fi on Android devices, as well as alignment with GSMA specifications (TS.43, SGP.32) and OEM frameworks such as Apple's. With automated orchestration, fraud prevention, and certification support, the platform reduces complexity and accelerates time-to-market for new services.

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