

Monetizing Network APIs

The Critical Role of the CAMARA Project



The CAMARA Project emerged in early 2022 as a collaboration between the Linux Foundation, the GSM Association (GSMA), and an ever-expanding group of telco operators and their partners who number in the 70s as of mid-2023. The Project's mission is to provide a standard mechanism that will open up global telecommunications networks to stimulate innovation and generate revenue growth.

The diverse nature of the CAMARA collaboration mirrors its vision of establishing a well-defined framework for the automated, seamless, and cost-effective interoperability between global network resources. Since its inception, the project quickly delivered the first set of APIs that will facilitate how operators expose their network functions and data not only to other networks but, critically, to third party developers and enterprises. Additional APIs continue to be developed and are rapidly making the API-based open network economy a reality.

Yet again, the telco industry finds itself at another inflection point: with bold and progressive thinking, providing APIs and, importantly, monetizing them, could be a major growth catalyst for the industry. The revenue opportunity for network APIs alone has been estimated at \$20 billion by 2028, so this is an opportunity that cannot be ignored.

With the participation of major telco operators, systems integrators, equipment vendors and independent software vendors (ISVs), the challenge will be to *turn what is possible into achievable and measurable results* with a growing number of use cases and associated business model changes.

Sustainably monetizing network investments of all types — 4G, 5G and fiber — is an imperative for all communications service providers (CSPs) to achieve growth. Shareholders and stock markets alike continue to look for evidence of a turnaround in both telco revenues and margins to signify a return on that invested capital. Bold steps are required if the pattern of declining revenues is to be reversed. One lesson is that monetization strategies cannot be an afterthought to network investment. They must be an integral part of early planning.

Enter the monetization of network APIs.

The CAMARA Project

The objective of the CAMARA Project is to envision and architect seamless access to network assets and data to third parties through standard APIs.

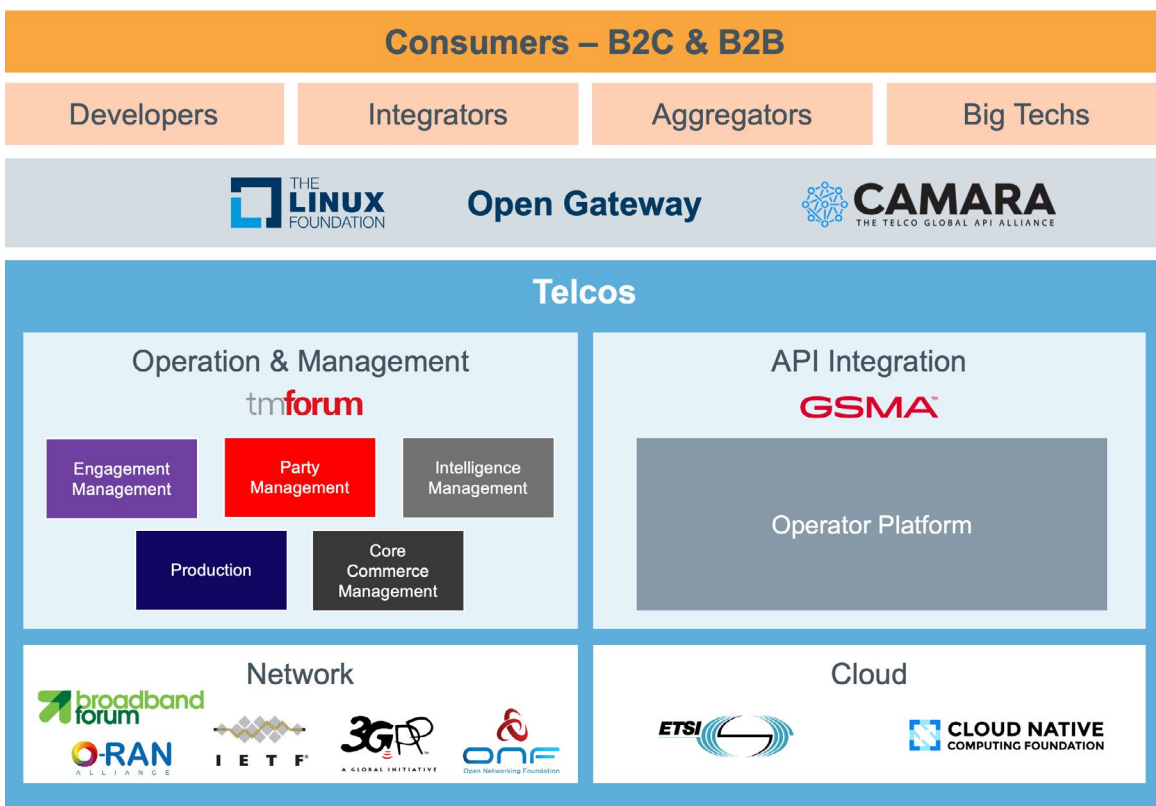
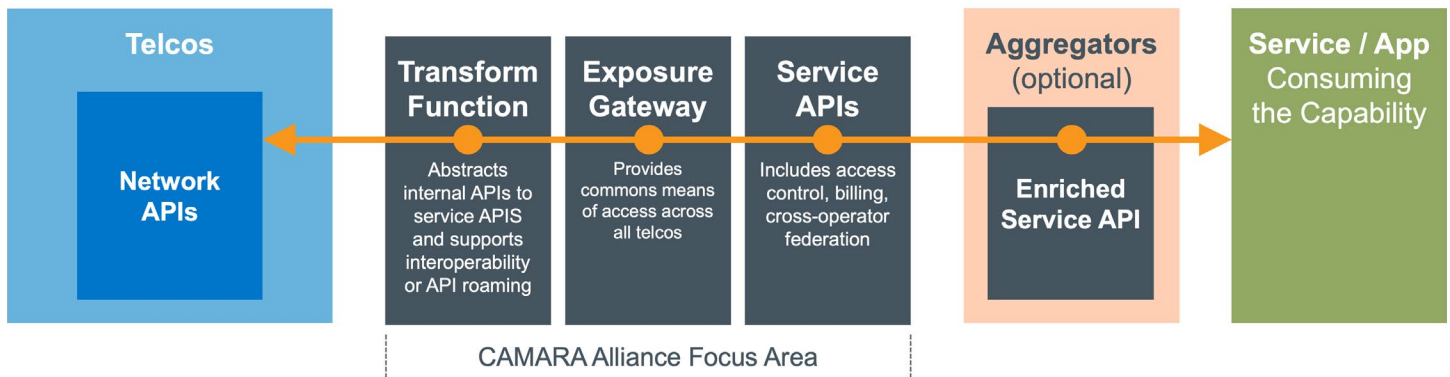


Figure 1: High level CAMARA Project structure and participants

While these APIs are not designed to be 5G-specific, the seamless connectivity benefits that they provide will dramatically expand 5G business models. 5G, with its rich capabilities and flexible microservices-based architecture, both expands and focuses that potential. The CAMARA service APIs abstract network architectures and, in doing so, make end-to-end network facilities and capabilities easier to consume for developers. When commonly and consistently applied across multiple telco networks and geographies, the opportunity for economies of scale, combined with increasingly rich network features, could deliver a significant win-win across the value chain.



Source: Based upon Linux Foundation material

Figure 2: CAMARA Project scope

The technical scope of CAMARA is to abstract and/or aggregate telco APIs, transform them, and expose them for use by service APIs that facilitate embedded network capabilities into third-party applications.

To date, a number of service APIs have been defined that the CAMARA community is now working on to deliver, with telco operators taking them into an early proof-of-concept phase. Those APIs are outlined below.

- **Carrier Billing Checkout** — Supports purchase, payment request, follow-up payment processing and follow-up fulfillment of physical goods
- **Device Location** — Check the location of a device
- **Device Status** — Check whether a device loses a connection or reconnects and checks roaming status
- **Edge Cloud** — Manage, reserve and deploy edge/VM resources for an application, and managing traffic routing to the deployed edge instance
- **Number Verification** — Verifies the phone number associated with a device SIM
- **One-Time Password (OTP) Validation** — Real-time verification via SMS that a requesting user is in possession of the device
- **Quality on Demand (QoD)** — Sets the quality for a device connection or returns notification if it cannot be fulfilled by the network
- **SIM Swap** — Requests history of any recent SIM swaps paired with a device to investigate potential fraud

- **Device Identifier*** — Identify the device being used by a subscriber
- **Home Devices Quality on Demand (QoD)*** — Prioritize a specific device's traffic on a home network
- **Identity and Consent Management*** — Capture, store and management user consent for use of network APIs to query, configure and manage resources of that user, in order to comply with privacy and data protection regulations around the world

* In development
Source: Linux Foundation

Monetizing Network APIs

Complexity is always the enemy of growth, and nowhere has this been more evident than in telco monetization architectures. Complexity has delayed time to market, created missed opportunities, delayed revenue collection and frustrated consumers. Network API projects will attract a growing set of participants into the telco community: developers and integrators with little telco-specific experience, as well as aggregators and marketplace operators who will facilitate interoperability for their piece of the collective network pie.

Once APIs are defined, and interoperable functions and processes are in place, the challenge becomes how to monetize that interoperability in a reliable and efficient manner. Simplifying the telco monetization architecture will be key to unlocking the aforementioned \$20 billion opportunity. Telcos will need to ensure they can match the network infrastructure with a dynamic, on-demand monetization platform that assures transactional accuracy and agility of the revenue stream alongside the network.

What's a Telco to Do?

Defining and proving new monetization models early is as critical as defining the APIs themselves. Projects like CAMARA exist to drive growth and innovation in the business model, and monetization strategies are foundational to that goal.

The goals of a streamlined monetization plane should be to support different monetization models, offer flexible payment terms, provide 100% accuracy and transparency to those wishing to track usage, track spend and settlement, make flexible payments or initiate new activities. By operating as a "single source of monetization truth", this will go a long way toward removing the legacy complexity outlined and provide an innovative and progressive way of supporting new initiatives.

An API Monetization Scenario

This use case describes combined benefits of network APIs and monetization models that support the allocation of costs and shared revenues across numerous parties in the value chain. In this scenario:

1. A third-party game developer embeds network APIs into its platform so that it can offer an enhanced service to its gaming customers: the ability to purchase “boosted” quality of service levels for a period of time.
2. When the game detects a degraded experience, it offers the gamer an option to check for and purchase a “boosted” experience.
3. When the gamer requests a boosted experience, numerous APIs are invoked between the gaming platform and the serving telco network to establish identity, check location and determine available edge resources to provide the desired level of bandwidth and latency.
4. When the gamer confirms the options and accepts the price quoted, resources will be orchestrated and the gaming server provisioned in an edge location to provide the best service levels.
5. Each element of this process, from the APIs calls to the provisioning of resources and the use of resources, will be monetized, with costs and revenue shared among the players according to established agreements.

The APIs combined with the telco’s monetization capabilities ensure that all parties benefit for their role in delivering an enhanced experience.

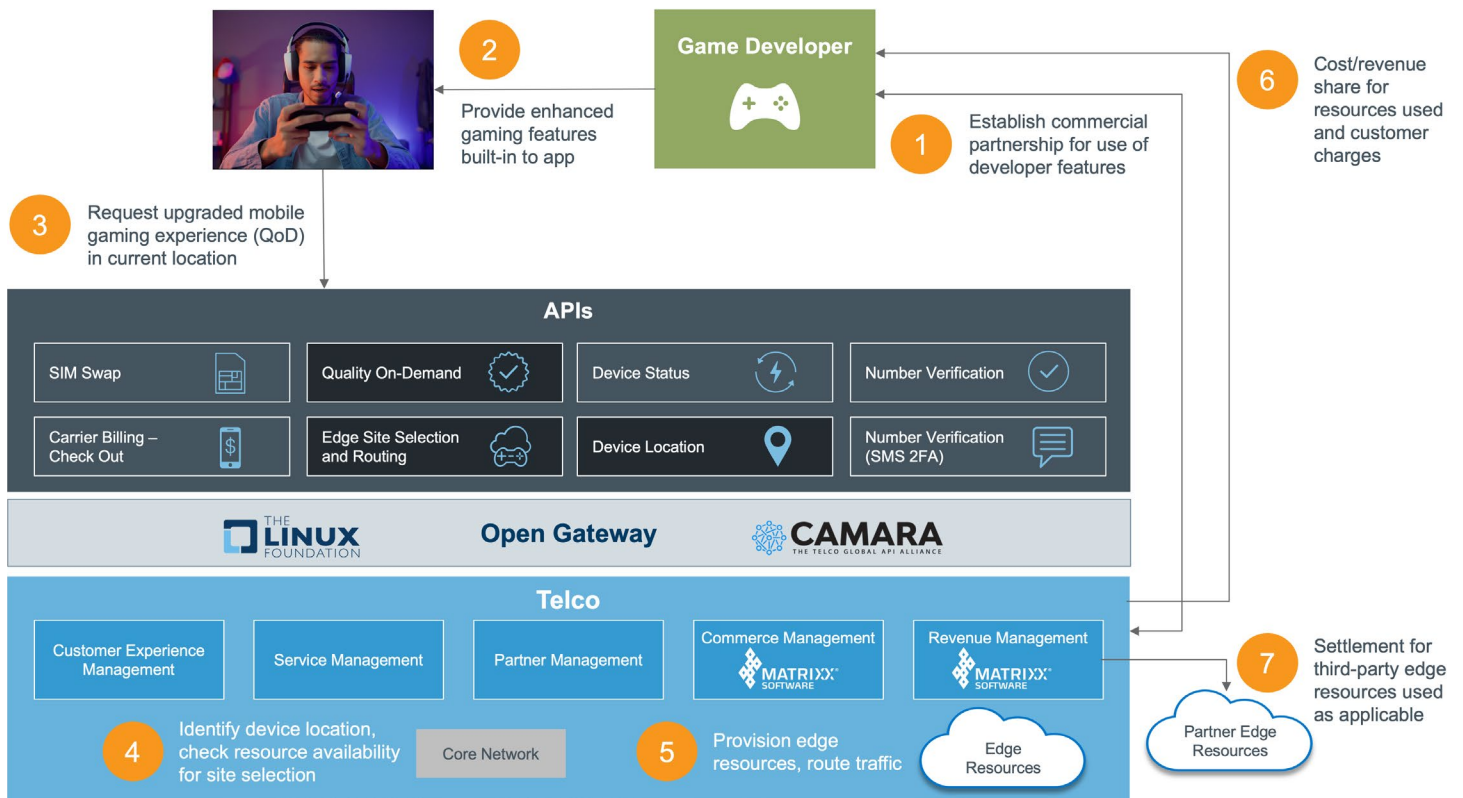


Figure 4: An enhanced mobile gaming experience utilizing open APIs

MATRIXX Software and the CAMARA Project

MATRIXX Software is actively driving and contributing to the CAMARA Project through engagements on new business model and monetization innovations within the GSMA Operator Platform Group, 3GPP Services and Systems Aspects Management, Orchestration and Charging group (SA5), and TM Forum ODA and Open API initiatives.

With extensive knowledge of the telco industry and a unique platform-driven approach that transacts billions of dollars of revenue in the telco vertical annually, MATRIXX Software is well positioned to deliver the monetization innovation required to bring sustainable scale and growth to this compelling opportunity.

MATRIXX Software's converged charging platform, Digital Commerce Platform (MATRIXX DCP) is unique in the industry, based on a real-time decision engine with SaaS-like, out-of-the-box configurability. Through its integrated charging and digital billing feature set, MATRIXX DCP is already providing a rich set of monetization building blocks to over 30 telco customers globally, supporting hundreds of millions of B2C, B2B and wholesale end customers.

Whether it's monetizing sessions, subscriptions, API calls, infrastructure usage, slices, VPNs, roaming, cloud, application usage or geo-location and time of day via flexible one-off, recurring or subscription-based payment models, MATRIXX DCP has the flexibility and critical agility to help telcos monetize this new development rapidly and sustainably.

About MATRIXX Software

MATRIXX Software delivers a modern converged charging and commerce solution proven at scale. Its cloud native Digital Commerce Platform provides network-grade, mission critical software that unlocks new network monetization opportunities. With its no-code configuration capabilities, MATRIXX empowers service providers with the agility necessary to easily develop, deploy and monetize new products and services. MATRIXX is the platform of choice powering many of the world's leading communications companies, IoT players and emerging network infrastructure providers. MATRIXX makes it possible to harness commercial innovation and on-demand customer experience to better compete and drive new revenue and growth opportunities across markets and verticals.

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