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HEAVY READING
WHITE PAPER

Monetizing 5G with B2B2X Partners

A Heavy Reading white paper produced for Salesforce and MATRIXX Software

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EXECUTIVE SUMMARY

The mobile industry is investing heavily in 5G. According to media research, 78 5G networks were launched across 37 countries by the end of 2Q20. The GSMA expects mobile operators to spend a massive 80% of mobile capex, or $1.1tn, worldwide on 5G networks between 2020 and 2025.

Operators are moving to the next phase of deploying new 5G core networks. This will enable more advanced 5G services powered by low latency performance, network slicing, edge cloud, and massive Internet of Things (IoT). Operators then have a real opportunity to develop new services that monetize 5G capabilities and diversify relatively stagnant revenue.

What really makes 5G different from any other "G" network is that operators cannot develop the killer services and innovate in isolation. Customers will only pay a premium for 5G services that enhance their daily lives or provide fun and engaging experiences. Partners and developer ecosystems will be critical in helping to innovate, monetize, and scale the market to reach the full revenue potential of 5G business-to-business (B2B) and business-to-business-to-X (B2B2X) value streams.

New capabilities and services on the horizon, as well as an increasingly collaborative digital services landscape, mandate that operators have the proper monetization tools in place. 5G core networks bring webscale capabilities to mobile networks if they can be effectively exploited. Leading operators are increasingly incorporating 5G converged charging, enhancing B2B flexibility and potential, adding IoT and partner ecosystems with automated onboarding and service delivery processes to manage dynamic 5G services at scale.

Telecom operators need to move out of the traditional focus areas and be stronger in other services. Without that, the future looks similar to those in the utilities sector … customers want more services from us, they trust us, and they are frustrated with us for not doing what we should be doing, truly innovating in services.

– Neil McRae, MD and Chief Architect, BT Global Services

With its cross-segment coverage, multidimensional partner ecosystem, and rich monetization levers, a holistic "powered by 5G" business approach will enable operators to break through the innovation glass ceiling that has restricted growth and competitiveness. New B2B and B2B2X value chains can be amplified with partner ecosystems as solutions to monetize the 5G economy, so operators must be ready to manage at 5G scale.

Monetizing 5G is not about a killer device or service or owning services end-to-end, but instead creating new value for consumers and businesses through enabling a diverse set of partners, including device, content, systems integrators, enterprises, web hyperscalers, app developers, distributors, and implementers, to innovate in this multidimensional partner ecosystem.

This will demand increased process automation, an open API-based architecture, agile partner management platforms, digital commerce exchanges, and a flexible real-time monetization capability to turn the 5G opportunity into revenue.

INTRODUCTION

The 5G standalone core was standardized in 3GPP Releases 15 and 16, and it is now in the process of being deployed by various operators. Many operators are updating their IT stacks to allow the new services that strategists have been dreaming of to finally be monetized. These include remote healthcare, smart manufacturing, enterprise private networks, fixed wireless broadband, augmented reality (AR) and virtual reality (VR), real-time communications enabling smart city infrastructure, and in-car infotainment.

5G operators can experiment with speed-based tiers, premium pricing for low latency applications (e.g., cloud gaming), and new charging and business models for network as a service (NaaS) based on network slicing. Each logical "slice" meets service-specific requirements for network priority, latency, data rate, quality of service (QoS), and other key performance indicators. This will enable dynamic services that can be provisioned on-demand and customized to support new B2B and B2B2X multidimensional partnerships with digital ecosystems. The challenge will be to support these partnerships and new go-to-market business models at scale, whether it is a co-creation, wholesale, white label, or sell-through business model.

A 2019 TM Forum survey shows that while communications service providers (CSPs) currently generate 10% or less of their revenue from B2B services, over the next 5 to 10 years, the majority of CSPs expect to generate more than 50% of their revenue from B2B. This highlights the importance of the B2B marketplace for CSPs where 5G applications can drive significant value-add.

Whether operators are looking to build fresh brands, enable a digital-first approach, or simply monetize new digital services (e.g., music passes/4K VR gaming) as part of a 5G launch, legacy IT is often the Achilles' heel of the project. A modern IT stack can give the operator greater business agility to deploy new pricing, products, services, and strategies.

This paper looks at how mobile operators can leverage highly configurable 5G services and granular network control to reinvent their business models by unlocking new, multiparty B2B2X service revenue and the platform requirements to create and manage digital partnerships at 5G scale.

5G MONETIZATION AND DRIVING NEW REVENUE

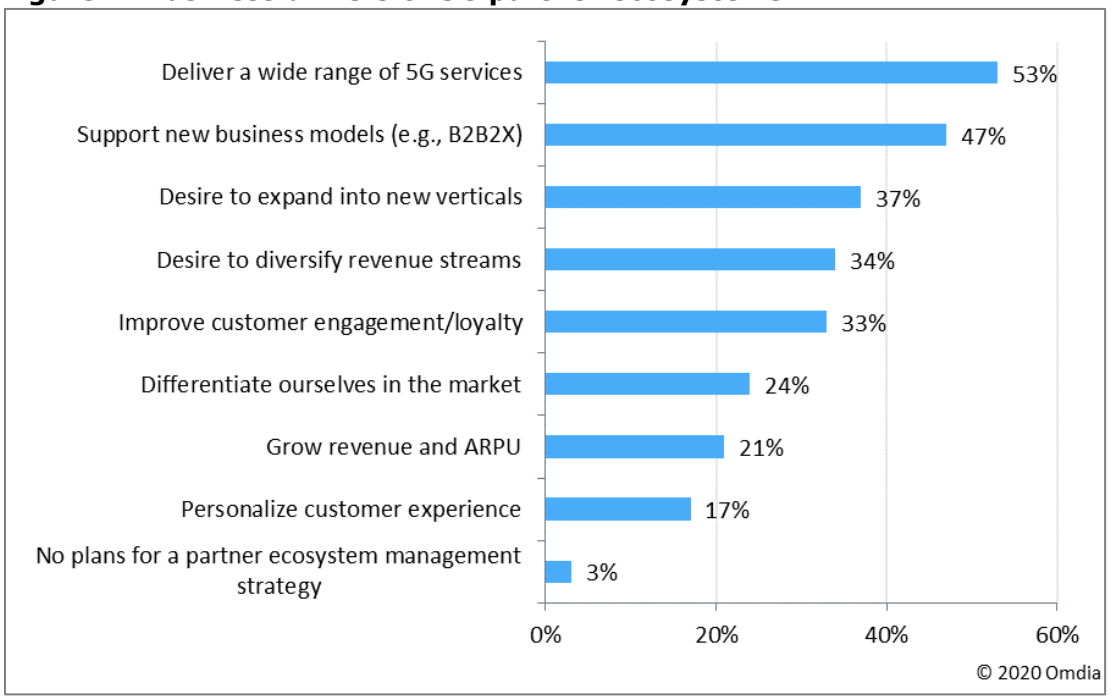
Now that 5G network deployments are well on their way around the world, operators are beginning to focus on a monetization strategy. However, monetizing 5G has proven to be a challenging task, thus far, for the 78 operators that have already launched 5G. Omdia's 5G World 2020 Global Insights Survey found that nearly 60% of those that have already deployed 5G are dealing with the challenge of creating profitable business cases for the network. The reason? Unlike in 3G and 4G, where mobile apps were the "killer use case" driving CSP monetization strategies, the industry has yet to identify a "killer use case" for 5G. Or has it?

Analyzing those publicly announced 5G services, thus far, reveals an interesting trend: mobile operators are increasingly leaning on partners to deliver new 5G services and use cases. From automotive to smart cities to smart factories, the role of partners is growing in importance as operators search for success in 5G.

More than half of the operators surveyed by Omdia (53%) plan to implement a multidimensional partner ecosystem management strategy to deliver a broader range of 5G services. One of the challenges that operators have faced in recent years has been maintaining relevancy in the market by offering unique services that appeal to the needs of the masses. Centering the monetization strategy around bits and bytes, with tiered data allowances or unlimited pricing, has led to a commoditization of the network. However, by shifting focus toward partner-enabled services, operators can create differentiated service offerings (e.g., immersive entertainment services) and gain a competitive edge.

Partners are also poised to play a significant role as operators explore new industry verticals. According to the same Omdia survey, more than one-third of operators will implement a partner ecosystem management strategy to expand into new industry verticals, and another 34% plan to diversify their revenue streams.

Figure 1: Business drivers of 5G partner ecosystems



Source: Omdia, OSS/BSS Evolution Survey

In order to monetize 5G, operators need to move from a connectivity mindset focused on the underlying technology to providing a network as a platform that connects customers efficiently with their services (in the way they choose!) by enabling multiparty B2B and B2B2X models. Ideally, they need to build in the flexibility to support any service for any industry through any business model. New 5G digital services will be much more dynamic, requiring agile operations and IT systems to support that. Operators also must be able to build, launch, change, and tear down offers quickly. They need to support dynamic pricing and be able to change prices and packages on the fly.

Network slicing uses the principles of modern cloud architecture to run multiple logical networks as independent business operations on a common physical infrastructure. In theory, the number of slice types is limitless, as there could be slices for different applications (e.g., video gaming and VR) or even individual customers. Enterprise

customers or partners could be offered a mobile network slice (a virtual private instance with unique SLAs and enhanced security) or a NaaS deployment with guaranteed uptime, for example, to support factory automation. Network slicing could also allow much more granular configuration of mobile virtual network operator (MVNO) or wholesale partner services than is possible today. Charging will need to be dynamic and real-time based on the network load and performance characteristics of the accounts, subscribers, and devices attached to slice(s).

This will enable more advanced use cases and services that rely on multi-access edge computing (MEC) and virtualized network functions (e.g., content caching, AR/VR, and large-scale real-time communications to support smart cities and connected cars). Edge cloud computing can be deployed wherever low latency, localized processing of data, or computation offload are important. Operators and hyperscalers like Amazon, Google, and Microsoft are forming partnerships to develop 5G MEC services. New B2B and B2B2X value chains can be amplified with partner ecosystems that must be ready to manage at 5G scale.

Figure 2: 5G B2B and B2B2X services with partnership revenue potential

Service	Delivery	Partners	Monetization
Real-time multi-user cloud gaming, content, VR	NaaS or network slice* for cloud gaming, VR, streaming video	Partnership revenue share or white label/wholesale model (gaming company, video, content, VR/AR); digital ecosystem B2B and B2B2X	Charging based on usage/session, time/ QoS upgrade; variable based on time of day/traffic, QoS guarantees, location, device, etc.
Connected traffic infrastructure: Smart sensors or cameras trigger real-time actions, rerouting vehicles or changing traffic lights	NaaS or 5G network slice for critical data communications and public safety	Public sector cities or MVNOs; digital ecosystem B2B and B2B2X	Charging based on usage/volume/ number of connected devices/number of events/number of vehicles in transit
Connected cars: Infotainment, e-calls, vehicle-to-vehicle-to-X (V2V2X) comms to other vehicles, infrastructure, road users	NaaS or network slice; the first deployments in commercial vehicles expected early 2021	B2B2X digital ecosystem, OEMs for wholesale car manufacturers or partnership revenue share, retail direct to car owners and occupants (possible with slicing)	Charging based on session/event, streamed video/ usage/application/ slice with geofenced location restrictions

Service	Delivery	Partners	Monetization
Smart spaces: Neutral host networks	NaaS or network slice; B2B2X to retailers or consumers, IoT, enhanced experiences, 5G FWA; 5G security cameras	Airports, ports, shopping malls, sports arenas B2B and B2B2X digital partners	Charging based on session/event/ application/slice/ uplink speed/download speed
Private 5G campus networks (e.g., manufacturing)	Private networks (enterprise buys spectrum) or provided by operator as a network slice, as a service, or as dedicated private network equipment	Smart factories, hospitals, ports, etc.	Segmented service delivery for different users subject to throughput/latency and reliability SLAs

* As a "slice" (virtual private instance) of a mobile operator's radio and core network.
** As a service, where a service provider owns and manages the radio and core network components and advises on the deployment model.
Source: Heavy Reading

CREATING VALUE WITH DIGITAL B2B ECOSYSTEMS

The monetization of 5G networks will require operators to strike a balance between meeting customer experience expectations, creating new services, managing an evolving multidimensional partner ecosystem, and leveraging the unique capabilities enabled by 5G (e.g., network slicing or edge computing). Rather than taking on the inherent risks involved in expanding into new industry verticals (i.e., R&D or acquiring companies in the target industry), operators can leverage partners in their target industries to create compelling 5G-enabled offerings to serve a specific industry.

However, pulling this off will require operators to have a partner ecosystem management and monetization solution in place. Delivering an array of 5G services and serving multiple industries will require a constant flux of partners with diverse business models in the CSP ecosystem. Depending on their existing business strengths and markets, operators will also differ in which segments they are prioritizing (e.g., consumer or industry-specific solutions) and in the size and type of partners.

Operators will have a role to play in supporting new devices and services for consumers, such as smart homes, wearables, and personal devices that include VR headsets, laptops, and tablets. Each of these categories will not only expand the ecosystem for operators, but will also bring new partners and business models. Today, operators lack the agility and the nimbleness that is required to support so many devices, brought by so many partners, with so many diverse network and business model requirements.

Customers differ dramatically, however, in how they prefer to pay for 5G, and operators need to be able to monetize every type of business model that emerges from consumer behavior. Since many consumers are unwilling to pay extra for 5G, operators need to be able to monetize partners and introduce indirect monetization mechanisms (e.g., sponsored data and QoS features like ultra-low latency).

Monetizing partners is not new, but in the 5G context it will take on new dimensions in terms of both the opportunity size and the number of potential partners. As an example, operators can distribute video streaming subscriptions and charge end users the full retail price of $10.99 through direct carrier billing. They would retain $2 per subscriber, but also receive $0.99 per subscriber from the video streaming partner for guaranteed ultra-low latency during a live e-sports event.

Managing the continual influx of partners demands that operators invest in a partner ecosystem management platform that allows them to onboard and manage partners as they move in and out of the CSP's ecosystem:

- **Scale happens with ecosystems:** Digital partner ecosystems will enable developer communities, API management, and the complete automation of ordering, fulfillment, and charging. A dynamic charging and real-time monetization capability can transform new 5G enterprise applications and edge cloud use cases.

  As new enterprise applications and edge cloud use cases are enabled by 5G, new protocols and interactions between communications networks and enterprise systems will transform value chains. A digital marketplace to onboard enterprises and partners for service design and provisioning and a digital portal for account, customer, and service management will be critical in driving scale. Progressive CSPs will implement new applications exchange models where developer partners can list their value-added applications and services that have been vetted by the CSP and then made available to B2B, B2B2X, and business-to-consumer (B2C) customers.
- **Speed to market with new and dynamic offers:** Operators will need to fundamentally change their operations models by adopting open APIs, DevOps, and microservices that will give the flexibility to continuously experiment with offers and pricing to incentivize innovation. New opportunities will appear—and disappear—at a speed and scale typical of webscale operators, thus threatening to outpace the operators. Operators need to implement a monetization environment that is agile at scale to create and deliver at speed (hours/days), support multiple pricing models, operate entirely online, and foster complex partner ecosystems to fully monetize 5G.

KEY ATTRIBUTES REQUIRED TO ENABLE DIGITAL ECOSYSTEMS

Operators should invest in partner ecosystem management platforms that, at a minimum, include a partner portal, partner relationship management capabilities, and sales support capabilities to enable partners to leverage CSP assets like connectivity, network slicing, and edge services to create new and differentiated 5G services. Partner ecosystem management platforms should also embrace open APIs to improve the platform's ease of integration with an operator's existing IT ecosystem and the partner's IT and development ecosystem.

Developing a commercial B2B marketplace and developer and partner community will require the removal of cultural roadblocks that prevent co-creation with the flexibility to implement new business models (indirect, value-added services, two-sided platform, etc.). On the platform side, this will require the ability to deliver the network and APIs as a service, an agile catalog to rapidly experiment with new offers, a fully automated service lifecycle, dynamic pricing, real-time charging, and analytics on customer usage.

To enable a "fast fail" approach to service experimentation, mobile operators will need a way to spin up and tear down services with webscale agility. These new service propositions must be created quickly and scaled to meet demand, or discarded if unsuccessful. That agile product development requires software that can be adapted through configuration, not lengthy code rewrites.

The business support system (BSS) must support a digital-first experience in which consumers and business customers can purchase new 5G-enabled services on-demand and access them immediately. The BSS must also leverage cloud economics to enable scalability and reduce the cost to serve. 5G will lead to an explosion in connectivity with many more smart devices per person (IoT and wearables), but legacy systems are unable to cost-effectively support such opportunities.

Figure 3: Key attributes of digital ecosystems and exchanges

	Benefit
Easy to configure offers and pricing	Rapidly launch new digital services and enable partners to exchange on an enterprise commercial catalog.
NaaS and APIs as a service	Create a network and API community in an exchange, and expose the network and APIs as a service to developers and customers.
Catalog-driven	Capture orders right the first time, with catalog-driven B2B sales that are enabled on every channel and device.
Fully automated for scale	Automate high volume service fulfillment and activation.
Converged charging and monetization	Monetize digital services in new ways with rating and charging for all 5G usage and network dimensions based on a cloud-native architecture.

Source: Heavy Reading

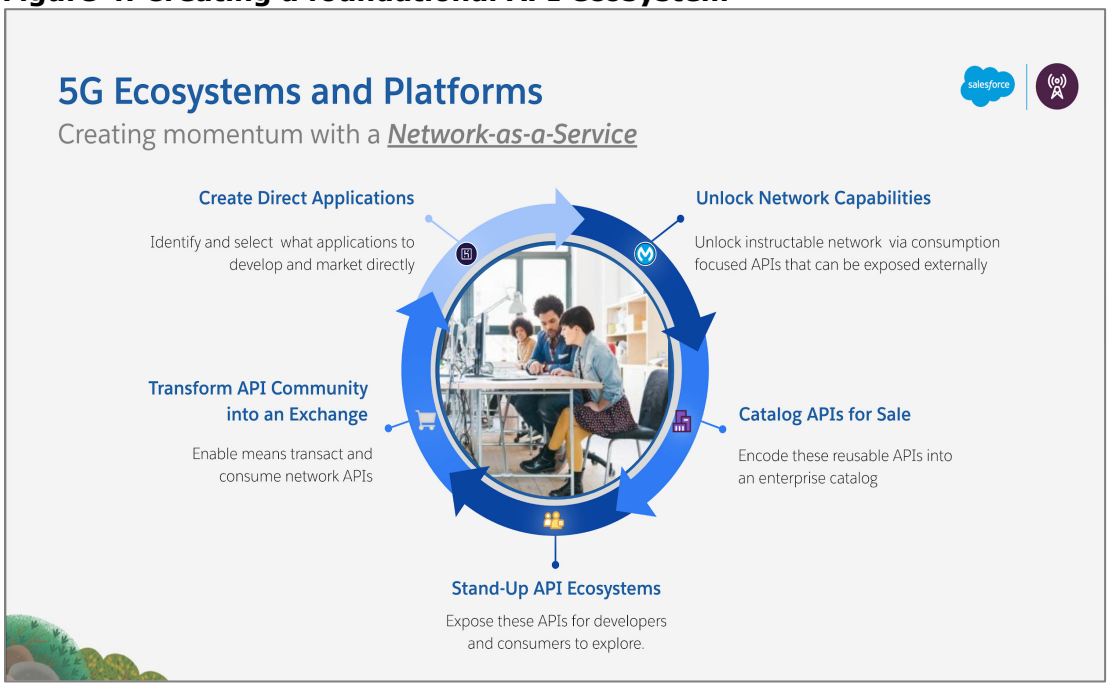
API monetization

Operators are evolving their monetization platforms to provide new 5G services in an ecosystem with multiparty service delivery, account management, and payment solutions. This requires open API architectures, catalog-driven products with standard templates, and mechanisms for automating high volume service order activations to deliver fast, agile, and differentiated business, consumer, and wholesale experiences.

TM Forum's 2020 Connectivity Benchmark report mentions that integration challenges are slowing digital transformation initiatives for 85% of IT organizations across all industries. Open APIs are fundamental to an API-led connectivity design principle that unlocks data from systems, composes data into processes, and delivers it as an experience to the final user. Open APIs need to be discoverable by developers and partners in a self-service fashion.

For enterprise and digital partner ecosystems, consumption and reuse of APIs are just as important as production and exposure. In order to fully operationalize these APIs for CSPs, the implementations are extended using an API management platform, such as MuleSoft, to enforce enterprise security and governance.

Figure 4: Creating a foundational API ecosystem



Source: Salesforce for Communications

The following operator case studies include a focus on time-to-market agility and new business model development in areas such as dynamic rating, session-based charging, and network slicing. The goal is to create an on-demand network offering that can be easily configured to the needs of enterprise customers and partners.

Case study: Tier 1 operator launches digital marketplace

This is an example of a Tier 1 telecommunications operator that has traditionally provided global security, cloud, and networking services to Tier 1 multinational companies with operations in 180 countries. The Tier 1 operator's new platform and marketplace empower it and its partners to sell new software-defined wide area networks (SD-WANs) and cloud-native products (e.g., Zoom and Amazon Web Services [AWS]) that are enriched for enterprise-grade performance. These products will be coupled with the Tier 1 operator's own services, such as security and experience monitoring. Salesforce Communications Cloud is the tool that provides the digital B2B commercial process that allows the Tier 1 operator and its sellers to configure, price, and sell digital solutions effectively. The solution includes Enterprise Product Catalog, Configure, Price, Quote, and Order Management.

Case study: DISH's new business model for standalone 5G

DISH is building a new standalone 5G network in the US. Its strategy is to enable new business models (consumer, enterprise, and B2B2X) based entirely on cloud-native technology and a virtualized, open RAN architecture. DISH is exploring ways to monetize new features, including enhanced access control, session-based charging, and network slicing, to create a new category of "network on-demand" propositions. MATRIXX Software provides a converged charging platform that will enable flexible and agile monetization to match the DISH vision for disruption.

CONCLUSION

Operators are at a crucial time, as they have an opportunity to grow revenue and expand into new markets with 5G. Investments in innovation must extend beyond the network to service propositions, digital processes, and the agile commercial platforms needed to create value, innovate with partners, and impress customers with an exceptional service experience.

A foundational digital marketplace, a multidimensional partner ecosystem, and open APIs offer the scale that is required to monetize 5G by enabling partners to develop network and managed services and then market them directly to customers. Real-time charging, dynamic pricing, and usage insights are essential to managing revenue and personalizing offers and experiences at scale.

Overall digital transformation goals and outcomes should guide a best-of-breed approach to platforms that can support a diverse set of services and partners, including app developers, hyperscalers, systems integrators, and industries:

- **Act now:** Market readiness for 5G has accelerated globally, with 2020 being a major deployment year, thus increasing the risk that operators will rush into supporting connections without being able to fully monetize the new services and features that 5G will enable.
- **Prepare for complexity:** B2C is the largest 5G segment, while B2B will introduce new revenue streams as it grows in relative importance to the bottom line. Both segments will require operators to manage a much wider, complex, and rapidly changing ecosystem of partners requiring advanced network features.
- **Manage at scale:** Operators must begin investing in a new set of agile monetization capabilities if they are to fully exploit the benefits of 5G. The 5G use cases described in this paper will only be possible if operators have the platforms and operations in place that can support and monetize varied B2C, B2B2X, and B2B business models and manage complex partner ecosystems.
- **Enable rapid changes:** Operational systems that can handle speed, agility, and scale will be essential because of the vast number of 5G services being delivered on an experimental and fail-fast basis. Real-time order management, provisioning, rating, billing, and charging are only a starting point, as it will also be necessary to break down silos between support systems and to streamline business architectures and processes. Artificial intelligence-driven automation will play an important role, as will the adoption of open APIs, DevSecOps, and microservices architectures.

ABOUT SALESFORCE FOR COMMUNICATIONS

Salesforce for Communications, which includes the purpose-built product, Communications Cloud, unifies all aspects of your Communications organization onto a single, scalable platform so you can deliver fast, modular, agile, and differentiated experiences across business, consumer, and wholesale. Salesforce for Communications provides a digital BSS solution for hundreds of CSPs, from the largest global providers to the small regional and specialized operators. Salesforce Communications Cloud provides the industry-specific quote-to-cash capabilities that propel real business results in B2C, B2B, and B2O implementations for sales, retail, care, and field service.

Learn more at the Salesforce website.

ABOUT MATRIXX SOFTWARE

MATRIXX Software is the global leader in 5G monetization for the communications industry. Serving many of the world's largest operator groups, regional carriers, and emerging digital service providers, MATRIXX delivers a cloud-native digital commerce solution that enables unmatched commercial and operational agility. Unifying IT and networks, MATRIXX delivers a network-grade converged charging system (CCS) enabling efficient hyperscaling of infrastructure to support consumer services, wholesale, and enterprise marketplaces. Through its relentless commitment to product excellence and customer success, MATRIXX empowers businesses to harness network assets and business agility to succeed at web scale.

Learn more at the MATRIXX Software website.