

WHITE PAPER

Executing a partner strategy to monetize 5G and IoT

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Introduction

Technologies such as 5G, network functions virtualization, software-defined networking and cloud-based platforms are creating significant opportunities for communications service providers (CSPs) to build profitable partnerships and launch innovative services. Rather than delivering only connectivity, operators can become digital ecosystem enablers, co-creating new services with partners and customers. But timing is everything: Operators must lay the groundwork now to capitalize on 5G and proliferation of the internet of things (IoT), and this requires transforming not only their networks but also their business support systems (BSS).

Published market research from a variety of sources projects that targeted business-to-business (B2B) markets will experience massive growth in the next 3 to 5 years, and recent research by TM Forum shows that CSPs intend to pursue these lucrative markets through partner-driven offerings that cater to specific B2B verticals.

However, to be successful in the future with partner-driven strategies, operators must first establish partner capabilities and communities. They will need to deliver superb experiences to attract, collaborate and generate revenue with partners. This requires a foundation of robust partner onboarding, self-service and monetization.

This white paper provides guidance to help CSPs succeed with partner-based B2B strategies by describing the key characteristics and capabilities that their partner experiences will need to offer, and this includes the option to choose a hosted, managed or cloud IT solution with a pay-as-you-grow commercial model.

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SECTION 1

Laying the groundwork for a strong partner experience

The potential rewards for developing a digital ecosystem strategy are huge for CSPs, with research showing that key verticals such as industrial automation, remote monitoring, digital health, smart grid, smart city and connected vehicles collectively represent a \$1 trillion market by 2023.







CSPs can't go it alone

For a recent report called *5G monetization: Operational imperatives*, TM Forum conducted a survey of 71 CSP executives from 53 unique companies and found that most realize they will not be able to deliver 5G and IoT use cases on their own. Rather they intend to form partnerships or joint

ventures to take advantage of the projected growth in these technology-driven B2B markets.

The graphic below shows the percentage of operators who intend to use joint ventures, partnerships and platforms as their primary route to market versus selling directly to customers.

Promising vertical markets

Industry	 Industrial automation	 Remote monitoring and control	 Global smart grid	 Smart city technology investments	 Digital health	 Global connected car
Size by Year	\$239B by 2023	\$27B by 2023	\$70B by 2024	\$158B by 2024	\$379B by 2024	\$219B by 2025
% of CSPs using partner or joint venture strategy	69%	62%	58%	67%	60%	48%

Netcracker & TM Forum, 2018 (sources for data: Global Market Insights, IDC, Markets and Markets, Research & Markets)

Partnering to monetize slices

The success of companies like Airbnb, Amazon, Facebook, Google, Uber and others in developing digital ecosystems that connect consumers with producers of goods and services is inspiring some CSPs to build multi-tenant platforms to enable their partners and customers, particularly in IoT verticals. Operators are taking a couple of approaches: Some are building their own platforms and opening them to developers via standard APIs such as **TM Forum's Open APIs**, while others are partnering with existing platform providers such as Amazon Web Services, IBM Bluemix or Microsoft Azure to deliver IoT services.

To learn more about how CSPs are approaching platforms, see these TM Forum reports:



For CSPs the biggest challenge may lie in finding a way to use platforms to manage and monetize services that have very different network requirements. Many operators believe the answer is 5G network slicing which can accommodate a wide variety of requirements in terms of bandwidth, latency and availability.

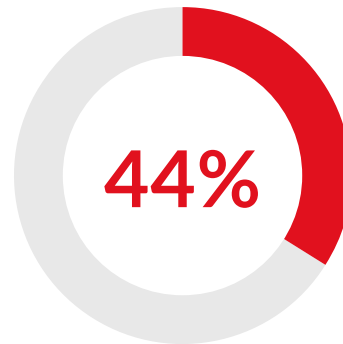
For example, some IoT applications such as sensor networks don't require much bandwidth because they only need to transmit small amounts of data, but they need to do so frequently. Video-intensive applications, on the other hand, require a great deal of bandwidth. An application like remote drone control, for example, also requires low latency, guaranteed availability and guaranteed reliability, because a service outage can be dangerous and result in loss of valuable assets. CSPs intend to address the varied requirements of specific verticals using dynamic network slices that can be orchestrated and assured end to end using automated closed control loops, intent-based management, analytics and policy.

Getting ahead of the coming growth curve

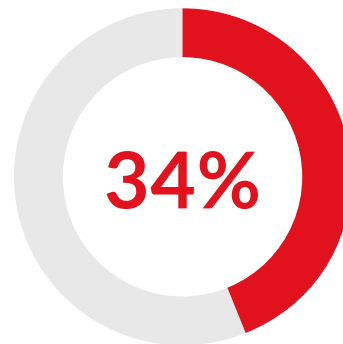
For CSPs to use network slicing successfully to deliver services to specific verticals, they must lay the groundwork for the partnerships required to deliver the services now. 5G deployment is in its infancy but is expected to pick up substantially in the next two to three years. TM Forum's research shows that 44% of CSPs surveyed intend to launch 5G within the next two years, and a third intend to roll out network slicing at nearly the same time. This means there is a relatively short window of opportunity for CSPs to develop strategies and deploy infrastructure that will allow them not only to offer network slices but also to create and deliver partner-driven B2B services over them.

In the next section we'll look at the capabilities required for a strong partner experience.

When will CSPs launch 5G network slicing?



OF CSPs
PLAN TO
LAUNCH 5G
**WITHIN
2 YEARS**



OF CSPs
PLAN TO LAUNCH
NETWORK SLICING
**WITHIN 1
MONTH OF
5G LAUNCH**

Netcracker & TM Forum, 2018

SECTION 2

Creating a digital partner experience

To monetize 5G slicing optimally by delivering vertical-specific B2B services, CSPs need to develop the ability to deliver experiences that attract partners by making it easy for them to onboard services, collaborate around new offerings and create new revenue streams. This requires that business support systems (BSS) be capable of ensuring that all parties participating in the digital ecosystem can generate value. Just as customer experience must span the entire customer lifecycle, a strong partner experience must cover the full lifecycle of the CSP's relationship with each partners from onboarding through to billing and sharing revenue.

Key components of the partner experience



Netcracker & TM Forum, 2018

Partner onboarding and management

Relationships with partners can be complex because of the range of business activities they engage in with their own customers. If their customers are other enterprises, multi-layered business models are often necessary. CSPs must make it easy for partners to onboard themselves, which means allowing them to design and define their business model within the CSP's platform. This might include details such as what they sell and to whom, what the rules of engagement are, how they generate revenue, and how they get paid.

Following are features CSPs should look for in a BSS for onboarding and partner management:



Provides flexibility and guidance in modeling partner organizations – the solution should be able to accommodate at least four types of partner accounts – reseller, distributor, supplier/vendor and wholesale – and be able to address variations and combinations of these models.



Enables highly configurable partner account creation – it should provide streamlined access to all partner-related information and interactions to describe the partner's commercial network (for example, who their customers are and how they generate revenue).



Offers a B2B-ready catalog – the solution should support simple and complex business products and provide pricing management that includes custom pricing for negotiated customer contracts, discounting schemes, and support for promotional campaigns and taxation schemes at multiple levels.



Simplifies partner contract negotiation and lifecycle management – it should support flexible definition of terms that translates into rules-based automation, so if terms or products change, this gets updated automatically. The solution also should be able to define the offers partners can distribute; define and make highly visible the compensation and discount mechanisms that the CSP can provide to the partner; and be capable of managing the lifecycle of the contract from activation through to modification, extension and deactivation.

Partner self-service

Self-service is central to any digital experience, and partners will judge CSPs on the quality of the digital, self-service experience they deliver. Think of the self-service portal as the outward face of the partner ecosystem. It must be compelling to the partner's developers and business analysts.

CSPs should look for BSS solutions that:



Make access to core business information easy

– partners should be able to review and update information without back-office involvement, and they must be able to check the status of settlements and log issues to let the operator know about problems, questions and opportunities.



Offer complete visibility into financials and performance

– a partner should never have trouble getting data about how they're earning revenue, whether they are being paid and whether settlements are accurate. All financial data including invoices, payments, activations, new subscribers, sales and transactions should be visualized and provided in configurable dashboards so that partners can measure the health of their business and understand revenue flow and opportunities at any given moment.



Automate and simplify partners' subscriber management

– the solution should make it easy for partners to activate and deactivate subscribers, track usage and service history, create custom notifications, and see transactions and account summaries. Subscriber adds, moves and changes also must be very easy to perform.



Enable partner sales processes and initiatives

– it should be easy for partners to sell the CSP's products and services, so the solution needs to be able to simplify and automate order entry and tracking by providing a single view of customer and product information. It should also deliver a B2B-capable pricing engine and offer guided selling and automated suggestions.



Provide effective reports and dashboards

– partners should have access to out-of-the-box and custom reporting, and reporting should span all financial data, usage, payment information, and partner and subscriber information.

“ The self-service portal is the outward face of the partner ecosystem and must be compelling to the partner's developers and business analysts. ”

Partner monetization

Partner monetization capabilities are critical because the primary goal for all parties in a digital ecosystem is to generate revenue. Platform providers such as Amazon Web Services, Google Ads and YouTube are successful not only because of their platforms' functional capabilities but also because it is easy for partners to understand how to use them to earn revenue. This platform approach is new territory for CSPs that are accustomed to selling pre-defined products through channels with very basic revenue-sharing capabilities.

In a partner platform setting, operators should look for solutions that provide:



A single billing platform – the solution should support all variations of partner models including complex multi-partner models. That means B2B, B2B2B, and any number of B2B2X levels and combinations.



Support for a variety of service models – the platform should be set up to manage many different ways of doing business and should provide support for machine-to-machine, IoT, over the top and mobile virtual network operator models.



Support for complex hierarchical billing and 'billing on behalf' capabilities – simply put, CSPs need to be able to bill enterprises and consumers in the way they want to be billed. This includes being able to bill and collect payment for partners'

services, similar to the way Roku allows its users to subscribe to and pay for partners' streaming services, like HBO, Netflix and Sling TV, through a secure payment account, right through the streaming device.



Flexible data charging and cross-product discounting – operators should be able to support a wide variety of charging models such as one-time, usage-based, recurring, spot pricing, 'freemium' and sponsored data. And the solution must make it easy for partners to create bundles and service combinations and price them competitively.



Robust multi-party settlement capabilities and data reconciliation – CSPs must be able to ensure that all parties are paid what they deserve while also accounting for adjustments, refunds, credits and other post-facto events across all parties. These capabilities should be automated. Operators also must be able to demonstrate billing and settlement accuracy, and help mediate disputes.



Dynamic, real-time charging to support on-demand 5G network slicing – In the future, operators will be expected to charge for new types of events such as slicing so they will need solutions that deliver complex real-time rating and charging capabilities.

In the next section we'll look at a use case example where a pay-as-you-grow platform positions a CSP to capitalize on a smart city project.

“ Platform providers like Amazon Web Services, Google Ads and YouTube are successful because partners understand how to use them to earn revenue. ”

SECTION 3

Use case: Winning in the smart city market

It is critical that CSPs start developing digital ecosystem strategies now in order to intercept new revenue growth in vertical markets as it begins to ramp and to drive rapid return on investment in 5G as these networks begin to go live. To illustrate the advantage a CSP that is prepared to deliver platform-based services has over one that is not, it's useful to consider a hypothetical smart city use case that will eventually require 5G network slicing.

What does the city need?

To attract business, stimulate job growth and expand its tax base, City X has announced an aggressive two-year initiative to become a smart city. Initially, the city wants to offer basic smart services such as a parking app and smart meter capabilities, but it wants to scale smart services quickly to offer companies in the autonomous vehicle market ultra-reliable, low-latency connectivity on demand.

The smart city program managers solicit proposals and proofs of concept from two CSPs. CSP 1 has partnered with its IT supplier to deploy a digital partner platform that is strong on partner experience and can demonstrate its onboarding, digital self-service and monetization capabilities in a live portal. The IT provider delivers the platform as a managed service so that the CSP has full access to its functionality; can brand it and configure it to represent its products; and offers a pay-as-you-grow commercial model. CSP 2 has not pursued a platform strategy, is relying on legacy systems that support its wholesale businesses and can only espouse its capabilities through static demonstrations.

Differing approaches

CSP 1 demonstrates a platform that will allow the city to expose services to partners through standard APIs, such as TM Forum's Open APIs. Partners can use a self-service web portal to select from a catalog of available services to develop and support their own applications. For example, the owner of several parking garages might use the portal to build a service that uses real-time traffic and GPS data to fill open parking spots, while the local utility could use smart meter data to reward businesses that reduce peak time energy consumption. Security partners can access dynamic network resources to scale surveillance during busy hours and events. Construction firms can access data on sites, weather, and

dock availability to coordinate new building projects and minimize environmental impacts. The CSP also shows how the platform can scale to offer autonomous vehicle partners ultra-reliable, low-latency 5G network slices.

CSP 2's approach, on the other hand, is offline and manual. It focuses on onboarding processes traditionally used for MVNOs, which require many face-to-face meetings and conference calls to understand the requirements and complete paperwork. This approach does not address joint product creation or collaboration. It's clear that the onboarding process is not self-service and partners are expected to bring in their own billing and payment platforms. CSP 2 presents its strategic plan for 5G network slicing, but it focuses on speeds and feeds and does not highlight a platform-driven, partner experience.

No contest for the winner

In the end it's no contest: CSP 1 gains the support of city's program managers and partners because it clearly demonstrates a functional digital partner experience that includes:



A self-service portal and automated onboarding capabilities



Collaboration tools and APIs developers can use to create and launch services



Monetization tools that can support a range of business models, customized contracts, and automates quote pricing for multi-partner services



Settlement and reconciliation tools to share revenue and provide visibility to stakeholders for auditing purposes

“ CSPs can limit upfront investment with a pay-as-you-grow model. ”

SECTION 4

How to deliver on a digital partnering strategy

Deployment of 5G is getting underway and is expected to increase rapidly, so it's important that CSPs develop support infrastructure now to address the lucrative 5G and related IoT markets that are projected to emerge within the next two to three years. This effort has near-term benefits as well because it applies to any B2B market. Indeed, a strong partner experience will strengthen all digital offerings, particularly in vertical B2B markets that are already attracting application and device developers who have innovative new solutions to connect, secure and commercialize. Here are five steps CSPs can take now along with important questions to ask:

- 1 Determine which verticals have the most potential and how to target them.** Should your company target customers in that market directly, as part of a joint venture, partnership or multi-tenant platform? Who are the innovative leaders in these vertical markets who are bringing new devices and services to market which need to be connected, secured and commercialized?
- 2 Consider market timing and where your business needs to be when the projected growth curve accelerates.** If vertical market opportunities begin to ramp within a year to 18 months, will your business processes and IT infrastructure be positioned to roll out value-added services, flex to support emerging business models, and capture a larger portion of each market than connectivity services alone will represent?
- 3 If a platform is needed, decide which approach to delivering platform-based services will work best for your company.** Does it make more sense to develop your own digital ecosystem, or would it be better to collaborate with existing platform providers?
- 4 Ensure that your BSS can extend a strong digital partner experience.** Does it cover the full lifecycle of the partner relationship from onboarding through to billing and sharing revenue? Does it offer automated self-service capabilities, and does it enable all participants to collect revenue?
- 5 Consider working with a strategic IT partner that has done this before.** It can be easier to get started by working with a partner who offers a fully managed end-to-end solution and which can offer a shared risk approach. Can your IT partner offer and sustain a pay-as-you-grow commercial model? Can it provide a fully managed, hosted and/or cloud-based solution? Does the IT partner have a demonstrable track record of successful solution delivery and strategic partnership with other market leading CSPs?

“ A strong partner experience will strengthen all digital offerings, particularly in vertical B2B markets that are already attracting application and device developers. ”

Netcracker Solution Spotlight: IoT Monetization, Partner Experience and 5G



The Internet of Things (IoT) is an important growth component of the 5G market. Traditionally, service providers focused mostly on connectivity in vertical IoT solutions, but this did not move their offerings up the value chain. Due to their existing customer relationships, expertise in providing complex services and determination to deliver new partner-oriented services, service providers can capitalize on greater IoT opportunities.

Netcracker's IoT Monetization solution delivers a BSS/OSS stack which can help service providers achieve this goal. Leveraging a cloud-native platform, the solution enables service providers to start small and expand as their IoT businesses grow. Its modular architecture can address specific business needs and adapt rapidly to a changing market with select components. Netcracker's IoT Monetization solution enables service providers to:

■ **Sell & Manage IoT Services**

Netcracker's Digital Marketplace delivers a better experience for customers shopping for IoT services. The solution's catalog can offer owned and partner products; automate partner and service onboarding; and enable multi-service bundling for one-stop-shopping.

■ **Charge for IoT Services**

Netcracker's IoT revenue management can manage unique settlement models and large transaction volumes. Service providers can utilize value-based charging and a variety of partnership schemas ranging from consumer services for to Industry 4.0.

■ **Manage IoT Partners**

Netcracker's partner ecosystem offers a range of leading partners for applications, data management platforms, devices and value-add services. It helps automate technical and commercial onboarding across integration and testing; revenue and customer management; and contracts, negotiations and supply chain definitions.

■ **Manage IoT Devices & Applications**

Netcracker delivers complete IoT environment management across onsite devices, SIM cards, device data and applications. The solution offers infrastructure maintenance and control and simplifies equipment integration. It also provides data management, including processing, consolidation, cleansing and compression.

■ **Orchestrate IoT Network and IT Infrastructure**

Netcracker's SDN/NFV solutions offer end-to-end service and network orchestration enriched with VNF management, license management and assurance. Service providers gain an end-to-end view of IoT environments to respond to network issues quickly; enhance SLAs; and optimize networks as IoT usage grows.

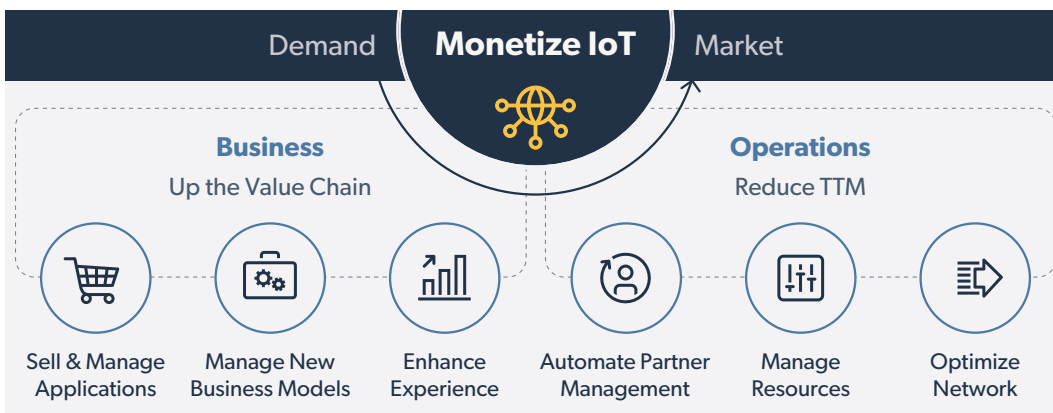
■ **Enhance IoT Experiences**

For public sector, large enterprise, SMB and mass market segments seeking intelligent security offers, Netcracker delivers video analytics, face and fingerprint recognition, and behavior analysis. The solution provides analytics that enable machine learning and improve automated decision making and data visualization.

The 5G vision brings great promise and potential with it, but it is time to deliver on that still-emerging opportunity. Because mobility, IoT, digital transformation and Industry 4.0 are intertwined, it is important for new solutions to provide innovative architecture; flexible capabilities; and growth-

oriented commercial models. Netcracker's IoT Monetization solution helps service providers capitalize on IoT opportunities with partners; across verticals; and in 5G and Industry 4.0 markets.

Please contact Netcracker today for more information at sales@netcracker.com.



For more about TM Forum's collaboration programs,
please contact **Andy Tiller**.