Netcracker Digital Platform: Primed to Deliver CSP Business Value Enlightenment

Overview

Netcracker Digital Platform: Helping CSPs Expand Digitalization and Create New Business Value

Communications Service Providers (CSPs) are making substantial investments in their digital transformation missions with particular focus on improving their business and operational systems to create new business value. These investments include accelerated deployment of 5G services, advancing cloud journeys, focus on B2B as a strategic growth area, expanding ecosystem influences, and expanding digital capabilities extend across the entire business.

However, CSPs must address and overcome notable obstacles to make their digital transformation missions more successful, particularly in areas like fueling business growth and delivering more business value to customers. We identify the main obstacles CSPs face today as consisting of some or all of the following:

- Ongoing reliance on silo-bound, proprietary business process and operations systems that limit the ability of CSPs to power rewarding customer experiences and engagements.

- Building and enhancing the 5G monetization platform required to warrant the expanding investments in 5G core, edge computing, and network slicing technologies.

- Assimilating intelligent automation to take advantage of critical capabilities such as AI/ML engines, zero-touch orchestration, and full lifecycle management.

- Acquiring and upskilling the workforce talent required to successfully administer the agile software development, DevOps, multi-cloud, SaaS, and self-development capabilities key to digital transformation success.

In this paper, we take a deep dive into the Netcracker Digital Platform, our findings, and why we believe the open, modular, digital-native solution is capable of stimulating the innovation and accelerating the agility that CSPs require to power their business growth and expand their business value. Netcracker Digital Platform sets out to enable the creation of immersive digital experiences, provide innovative monetization solutions, and delivers the intelligent automation key to fulfilling CSP digitalization objectives. The platform is built on a cloud-native foundation with the goals of optimizing cloud agility and cost efficiency and that can also be delivered on a SaaS (Software-as-a-Service) model. All components of the platform support Open APIs aligned with AI/ML and the highest levels of security and privacy required to assist CSPs in their mission to generate new business value and broaden their overall competitiveness through the fulfillment of most important strategic business objectives.

I. Netcracker Digital Platform Introduction: Key Highlights
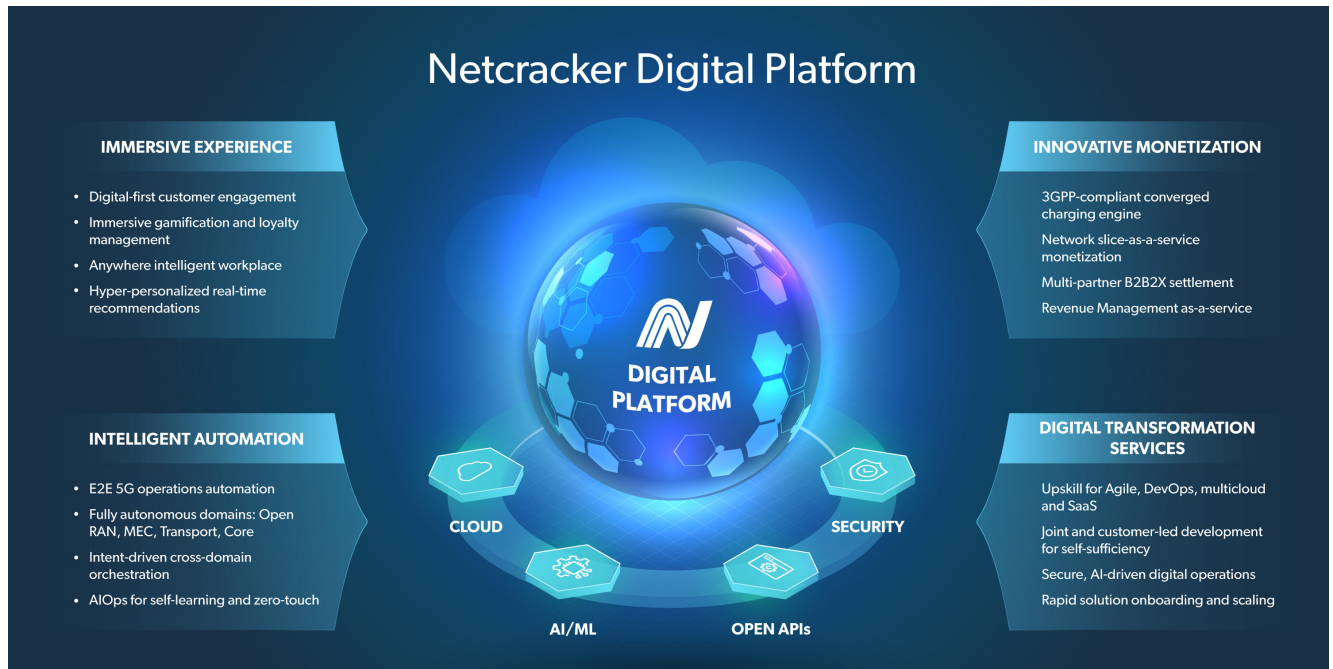
The Netcracker Digital Platform builds on Netcracker's innovation heritage and is already deployed in multiple CSP networks, including top-tier operators such as T-Mobile, Vodafone, Telefonica, and Etisalat. Netcracker Digital Platform's extensive footprint is impressive and attests to the company's ability to deliver the solutions that address the CSP ongoing commitment to deliver more business value for their customers. Four of the platform's key capabilities that our team here at Futurum were most impressed with include:

- **Immersive Experience.** The platform provides digital-first customer engagement. This spans immersive gamification and loyalty management, hyper-personalized real-time recommendations, as well as anywhere intelligent workplace applications.

- **Innovative Monetization.** The platform supports 3GPP-compliant converged charging engine that supports network slice-as-a-service monetization for each unique use case, along with multi-partner B2B2X settlement and Revenue Management as-a-service (RMaaS).

- **Intelligent Automation.** The platform enables E2E 5G operations automation including fully autonomous domains for Open RAN, MEC, Transport, and Core, along with intent-driven, cross-domain orchestration in concert with AIOps for self-learning and zero-touch.

- **Digital Transformation Services.** The platform furnishes upskill transitioning for Agile Software Development, DevOps, multi-cloud, and SaaS functions encompassing joint and customer-led development for self-sufficiency. It also supports secure, AI-powered digital operations and rapid solution onboarding and scaling.

II. Addressing CSP Monetization and Innovation-enabling Demands
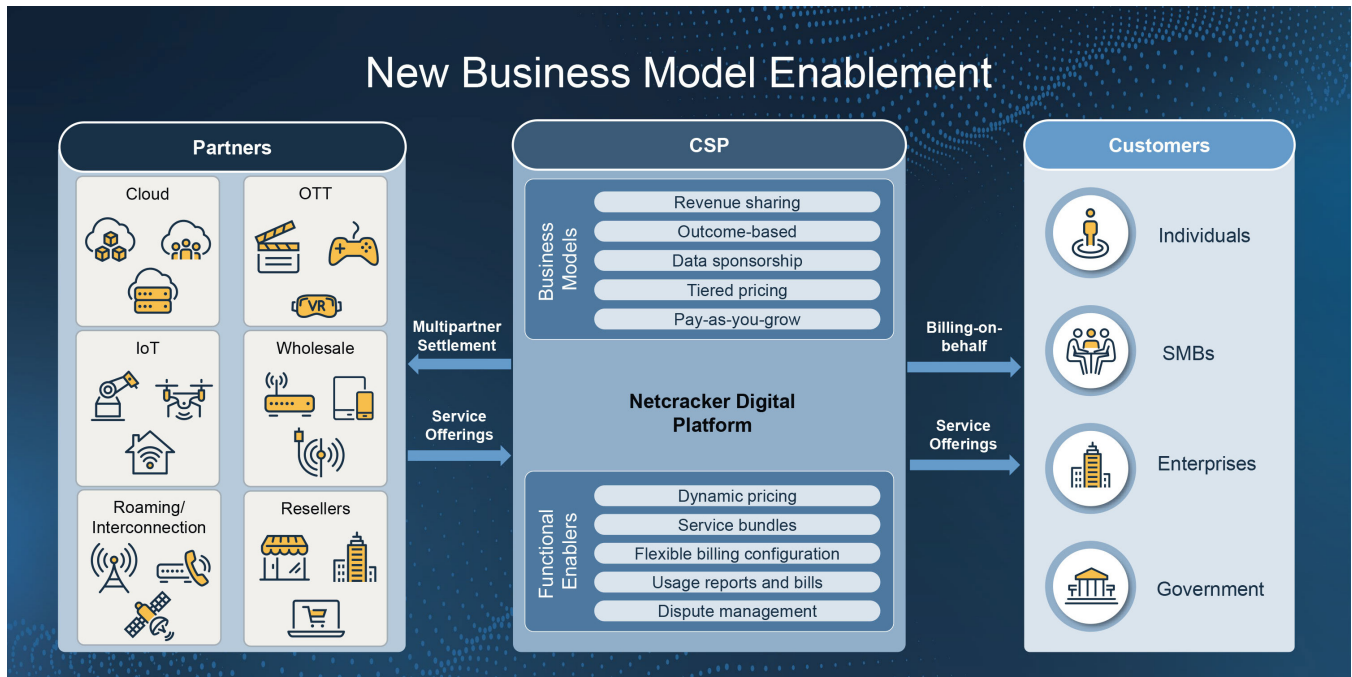
It is clear that Netcracker's Digital Platform was developed to build on the success of Netcracker 2020 and was developed to be well-suited in stimulating the innovation and accelerating the agility key to cultivating new business value across the digital ecosystem. The new capabilities include:

- **Accelerating business agility.** The platform can allow swift adaptation to evolving business and market needs through the delivery of rapid multicloud onboarding, broader adoption of SaaS offerings and evergreen updates, increasing levels of automation, and the acceleration of internal digitalization.

- **Spurs innovation and joint development.** The platform encourages the creation of new value on top of the network by enabling CSP self-innovation also in alignment with partner-based services and fortifying an immersive customer relationship.

- **Maximize revenue potential and profitability.** The platform targets the monetization of 5G, cloud, and edge investments through new, more granular, 5G monetization methods, broader adoption of flexible business models, and lowering IT spend by consolidating systems and improving operational efficiency.

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The new monetization and digital experience capabilities embedded in the Netcracker Digital Platform targets what we identify as fueling CSP success in becoming more agile, innovative, and profitable in the digital economy. With Netcracker Digital Platform, CSPs can gain the monetization innovation and immersive digital experience crucial to success in their transformation initiatives.

We see difference-making monetization capabilities afforded by the Netcracker Digital Platform as including support for the 3GPP-compliant 5G converged charging system (CCS), which is indispensable to providing SLA-based charging, multi-access edge computing (MEC), and slice-as-a-service (SlaaS) models on a standardized basis. As a result, Netcracker's 5G-ready CCS can play a vital role in equipping CSPs with the rating and discounting flexibility to charge for any service, partner, or business model in real-time and according to customer requirements. In addition, the platform unlocks new revenue opportunities with partners through its support of partner-ecosystem business models and intricate multi-partner B2B2X settlement implementations.

The Netcracker Marketing and Commerce Cloud component is likewise impressive. Through its unassisted digital channels, customers get a personalized shopping experience, with recommendations and promotions, for any B2B or B2C telecom products, partner ecosystem-driven digital products, devices and their bundles. CSPs can convert browsers into buyers much faster and the solution is offered in a SaaS based model.

For assisted channels, the Sales and Customer Service Cloud, also SaaS-based, provides guided selling and customer care by way of intelligent AI-driven recommendations. As such, the platform offers the overall Intelligent Sales Automation solution that CSPs want to create a rewarding sales experience and increase lead-to-order conversion to spearhead CSP revenue diversification aims.

Affords New Monetization Advances

Netcracker's modernized and cloud-native digital business enablement heritage is the cornerstone to advancing its monetization innovation vision, which the Netcracker Digital Platform is purposed-developed to deliver. In detail, these new offerings encompass:

- **Advanced 5G Monetization.** 3GPP-compliant CCS that supports SLA-based, MEC, and network SlaaS monetization for rapidly evolving 5G environments.

- **New Business Model Enablement.** Underpins multiple models, such as revenue sharing, outcome-based, data sponsorship, tiered pricing, and pay-as-you-go, key to CSP revenue diversification goals.

- **Improved Customer Experience.** Helps strengthen customer retention through ML-driven personalized collections strategies and personalized video bills.

- **Operations Excellence.** Low-code/no-code configuration of intricate tariffs, subscriptions, and price plans through automated execution, real-time monitoring and troubleshooting of billing operations.

- **TCO Optimization.** Serves RMaaS in alignment with adoption of mature open-source technologies (minimizing legacy Oracle database footprint) as well as converged charging across 5G/pre-5G, mobile and fixed, B2C/B2B/B2B2X, different verticals, and according to customer requirements.

Facilitates New Immersive Digital Experience Advances

Netcracker's modernized and cloud-native digital customer enablement and OSS/BSS expertise facilitates new digital experience advances. It is the bedrock to progressing immersive digital experiences, which the Netcracker Digital Platform is purposed-developed to deliver. In detail, these new offerings encompass:

- **Customer Engagement Digitalization.** Electronic Know Your Customer (eKYC) and automation of engagement for secure, remote onboarding, and intuitive self-care as well as persona-based engagement and real-time continuous intelligence that enables B2C customer experience management.

- **B2B2X Loyalty Management.** Facilitates ecosystem-driven customer loyalty programs that harvest a digital lifestyle and boosts lifetime value. For example, gamified customer journeys that unlock new monetization opportunities for CSPs and partners.

- **Integrated Digital Workplace.** Furnishes the SaaS-based cloud-native solution for sales and support agents enabling work from anywhere across hybrid and work-from-home (WFH) environments. Also supplies guidance for data-driven sales and customer service with a 360-degree view of the customer.

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The new immersive digital capabilities embedded into Netcracker Digital Platform can prove crucial for accelerating CSP objectives to commercialize and scale the anywhere intelligent workplace model. We view the platform's use of AI-powered recommendations to power UI design and product representation as well as customer journey modifications based on customer behavior in digital channels as instrumental to augmenting overall customer experiences including especially enduring hybrid digital workforce models in the post-pandemic era. Broad adoption of the Netcracker Digital Platform indicates CSPs can confidently deliver new digital experiences while upholding strict privacy laws and security requirements regardless of locale.

We anticipate that enhancing and scaling the anywhere intelligent workplace requires expanded uses of the SaaS-based unified agent workplace model to allow sales and support agents access 360-degree customer views, capture critical customer information, and deliver personalized responses through an intuitive interface, including swift next best step guidance. CSP investment in AI/ML, natural language processing, and image detection technologies, reinforce the main role automation can perform in improving customer engagement outcomes and experiences.

We are pleased to see the platform is designed to supply the foundation for the hyper-personalization, which is the customer 360-degree profile that provides the ability to onboard data from multiple CSPs and third-party sources. In addition, we see the success of hyper-personalization requiring a real-time decisioning engine that uses a deft combination of deterministic business rules and AI/ML-driven models to personalize interactions based on distinct customer behavior and situation.

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For consumers, it's exciting to see the platform taking loyalty programs beyond basic transactional exchanges to engage with users on a more personalized and inviting level, with gamified customer journeys that emulate successful membership programs (e.g., Rakuten). The platform capabilities include using a CSP's or partner-enabled services, by which customers can amass achievements, awards, and achieve new status and levels, allowing CSPs to further hone the efficacy of the loyalty programs.

Equally indispensable, Netcracker Digital Platform is capable of furthering monetization innovation with its 5G-ready CCS equipped with rating and discounting dexterity that enable CSPs to immediately charge for any service, partner, or business model, including SLA-grounded and SlaaS offerings. Additionally, CCS supports dedicated charging components in distributed edge compute platforms to support emerging low-latency MEC applications and boost network performance.

We regard the platform's support for smart aggregation of events for massive IoT accounts with millions of SIM cards per account as validating the cost-efficient IoT monetization at scale business case in reducing bill-processing loads by up to a thousandfold. Also, it uses analytics-driven collections management to improve experiences for high-ARPU postpaid customer using customer scoring, next best treatment step and optimized treatment schedule based on the analysis of customer data pooled from BSS and third-party systems.

Of note, we expect that CSPs can gain competitive advantages by using the platform's support for video billing as they look to move away from static invoices and apply real-time video generation based on customer profiles including cultivating how customers respond to personalized video features.

III. Netcracker Digital Platform: New 5G Operations and Automation Capabilities
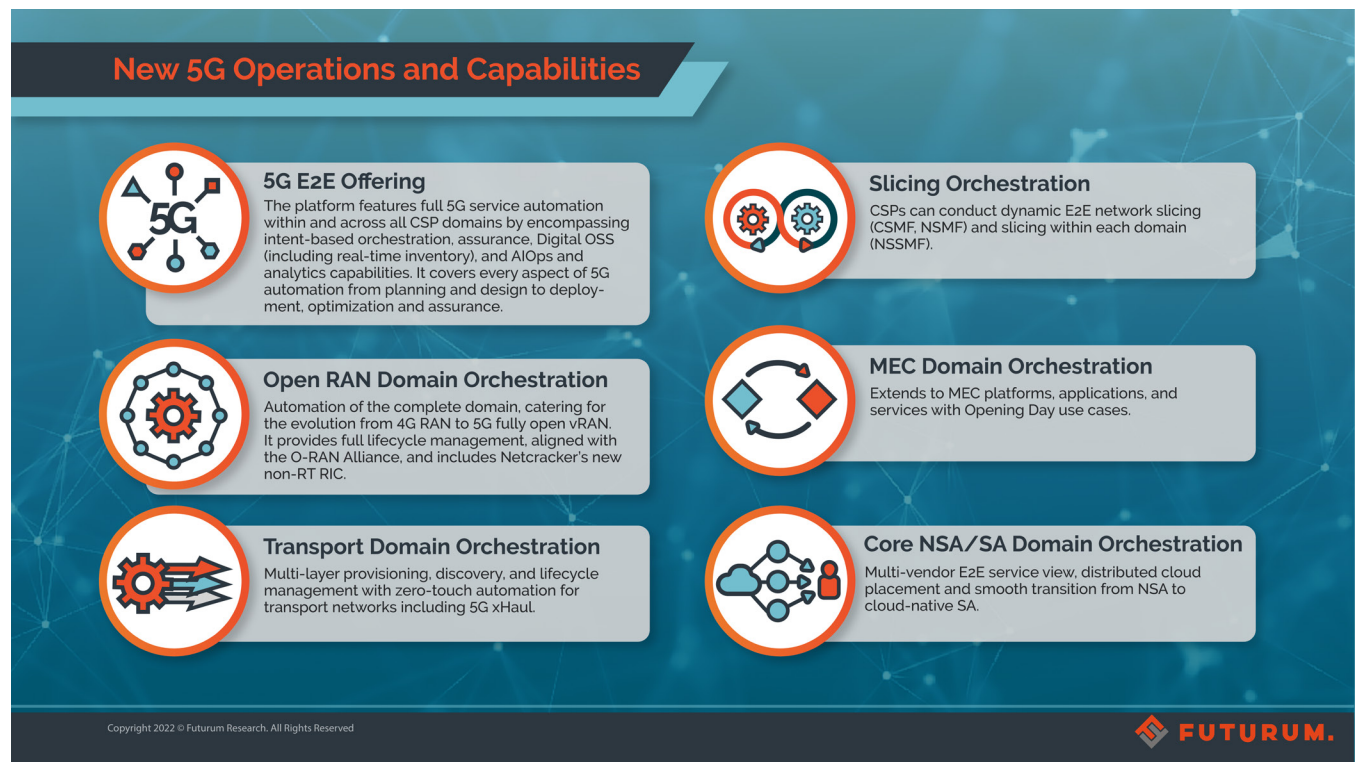
The Netcracker Digital Platform incorporates important advancements in operations automation with skillful use of intent, AIOps, design, and autonomous domains to fulfill the top most CSP 5G and digital services automation priorities. This could provide a significant assist to CSPs, helping them progress beyond process automation to a new realization of intelligent automation with self-learning, reasoning, and adaptation of control loops that enable zero-touch processes and self-management. The platform's key capabilities of intelligent automation include:

- **5G E2E Offering.** The platform features full 5G service automation within and across all CSP domains by encompassing intent-based orchestration, assurance, Digital OSS (including real-time inventory), and AIOps and analytics capabilities. It covers every aspect of 5G automation from planning and design to deployment, optimization and assurance.

- **Slicing Orchestration.** CSPs can conduct dynamic E2E network slicing (CSMF, NSMF) and slicing within each domain (NSSMF).

- **Open RAN Domain Orchestration.** Automation of the complete domain, catering for the evolution from 4G RAN to 5G fully open vRAN. It provides full lifecycle management, aligned with the O-RAN Alliance, and includes Netcracker's new non-RT RIC.

- **MEC Domain Orchestration.** Extends to MEC platforms, applications and services with Opening Day use cases.

- **Transport Domain Orchestration.** Multi-layer provisioning, discovery, and lifecycle management with zero-touch automation for transport networks including 5G xHaul.

- **Core NSA/SA Domain Orchestration.** Multi-vendor E2E service view, distributed cloud placement and smooth transition from NSA to cloud-native SA.

The intelligent automation capabilities enables dynamic system evolution with cloud-native technology and operation. Several of its customers are now running orchestration and automation software from hyperscaler platforms. In addition, the platform is designed to ease onboarding with SDK and support of open APIs and rApps.

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Netcracker Digital Platform provides a full automation solution for every domain (RAN, MEC, Transport, Core) that now includes Open RAN and MEC Orchestration. One clear differentiator we identify is that Netcracker is providing a complete intelligent Open RAN domain and optimization solution that works across multicloud far edge, near edge, and central data center fabrics. Due to the ongoing expansion of non-RT RIC and rApp use cases, Netcracker is meeting the CSP first-priority demand for components that completely align with ORAN Alliance APIs in forging a completely autonomous domain.

From our perspective, the platform's dedicated MEC orchestration capability offers day one use cases that span MEC E2E services, applications, and platforms as CSPs increasingly rely on edge computing resources to improve their overall mobile workload distribution efficiencies. Of merit, the platform delivers an evolved Network Domain Orchestration (NDO) solution to fulfill xHaul requirements for real-time operation of fronthaul, mid-haul, and backhaul applications across 5G transport environments. With the SA/NSA orchestration available, the platform orchestrates distributed multi-cloud deployments in public and private cloud implementations.

Netcracker Digital Platform also offers the full range of business-centric automation starting with domain orchestration specifically for the business edge including SDx (WAN, LAN, WiFi) with complementary VAS as well as domain orchestration for the agile enterprise consisting of IP/MPLS-based services with zero-touch provisioning, discovery, and operations. Moreover, end-to-end operational support for next-gen satellite (LEO) services and infrastructure attests as well as pre-designed automation for NetCos with a focus on ROI to the platform's automation range. We also view the platform's re-imagined hybrid federation automation could prove critical for the efficient use of conventional, virtual, and cloud assets.

For E2E services, Netcracker Digital Platform cross-domain orchestration is designed to automate the delivery of emerging connectivity and digital services, such as network slicing, private wireless networks, and SDx in alignment with digital services that include security, IoT, and IT. Through intent-driven orchestration, dynamic service models and closed-loop, CSPs will edge closer to zero-touch, especially for meeting the demands of 5G SA (Standalone) builds. Add in self-learning AIOps across the lifecycle of all digital assets, including apps, services, networks, and integration, CSPs can build a nexus between network requirements and business objectives, quality and problem management to, CSPs better position themselves to gain peace of mind in using cross-domain orchestration.

IV. Netcracker Digital Platform: Digital Transformation Services

Digital Transformation Services

Cloud Strategy Design
The platform's intelligent automation capabilities can create a digitalization strategy to assist CSPs define the most cost-effective migration process across their organization.

Cloud Onboarding
The platform affords full onboarding and integration services for Netcracker's solutions across a vast array of cloud deployment models.

Co-creation
The platform features DevOps best practices, tools, and processes to support continuous solution delivery and cohesive operations.

Multi-cloud Operations
The platform features deep expertise and industry best practices so as to maximize the value of digitalization initiatives.

Trust Center
The platform features advanced security services to protect sensitive data and infrastructure and ensure operational excellence in the swiftly evolving terrain of data privacy laws.

Knowledge Transfer
The platform's purpose-designed training programs to speed up productivity and power business value.

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We believe the Netcracker Digital Platform can help CSPs drive digital transformation for CSPs.

- **Cloud Strategy Design.** The platform's intelligent automation capabilities can create a digitalization strategy to assist CSPs define the most cost-effective migration process across their organization.

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- **Knowledge Transfer.** The platform's purpose-designed training programs to speed up productivity and power business value.

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With Digital Transformation Services, CSPs can attain a lucid roadmap for digital transformation, including business readiness of the workforce, processes, technology, and organization. This includes facilitating CSP's reliance on using Key Performance Indicators (KPIs) to measure and realize business value.

Netcracker's professional services include providing assistance to CSPs in accessing a cloud environment to catalyze their cloud journeys. As such, Netcracker stresses that solution scaling definitions are based on actual business needs including solution integration in a multivendor environment. We view this approach as assuaging the primal CSP fear of vendor lock-in by having multivendor interworking assurances built-in.

As noted, DevOps and agile software development are emphasized to smooth onboarding of third-party apps, partners, and functions including DevOps organization setup assistance as well as collaborative solution development.

Netcracker also provides extensive tools, training and consulting to help CSPs develop their own services, or co-develop with Netcracker and partners. Through joint development centers, CSPs can make their own configuration changes and even develop their own code for new services and features, becoming highly self-sufficient and encouraging self-innovation.

For Digital Operations, we applaud Netcracker's cloud-agnostic operating model as CSPs increasingly use multi-cloud operations to advance their cloud journey across multi-cloud environments. Integral to multi-cloud operations is the support of FinOps for more efficient cloud cost management.

Of key importance, Netcracker's Digital Operations solution emphasizes delivering the security and quality controls that CSPs consistently prioritize as a topmost business value objective according to our research. The Enclave component could ensure confidence in the safety and veracity of sensitive user information including augmenting security enablement through DevSecOps. We identify DevSecOps as essential to embedding organization-wide approach to automation, culture assimilation, and platform design that entrenches security as a collaborative responsibility throughout the entire IT lifecycle.

Further bolstering ecosystem-wide security credentials is Netcracker's implementation of a security framework (Trust Center) consisting of operational and technical enhancements developed to defend customer data and infrastructure by overseeing how, why, and from where such data and infrastructure assets is accessed. Netcracker's maintenance of a comprehensive set of compliance certifications, confirmations, and third-party assessments, including PCI DSS, PA-DSS, AICPA SOC/AICPA SOC2, and ISO 27001/ISO 22301, is impressive, and clearly validate its security credentials across the CSP landscape. This registers as a competitive advantage over rivals that lack the same range of security certifications on a consistent basis.

Netcracker provides the knowledge transfer framework that CSPs require to upgrade and scale their digital operations. This fully embraces curating DevOps best practices for knowledge transfer, mentoring, and coaching as well as training on pre-configured solution capabilities. Through such practices, we expect that CSPs can attain the tailored training that is key to expediting digitalization adoption across the entire organization.

V. Netcracker Digital Platform: Conclusions and Takeaways

Netcracker Digital Platform is answering the CSP clarion call for an open, modular, digital-native solution that powers their business growth and value creation by accelerating, internal digitalization efforts, delivering autonomous operations, building immersive digital experiences, and providing innovative, adaptive 5G business models. We identity the platform's ability to swiftly deliver business agility, stimulate innovation and collaboration, as well as establishing the foundation for maximized revenue and profitability outcomes as sharp differentiators. Ultimately, we believe that through Netcracker Digital Platform, CSPs are well positioned to drive new business growth by cultivating new value from rapidly expanding 5G/edge experiences, becoming more essential to their customers' digital lifestyles and increasing importance to their enterprise/vertical market collaboration goals.

IMPORTANT INFORMATION ABOUT THIS REPORT

CONTRIBUTORS
Daniel Newman
Founding Partner + Principal Analyst
Futurum Research

Shelly Kramer
Founding Partner + Principal Analyst
Futurum Research

Ron Westfall
Senior Analyst + Research Director
Futurum Research

PUBLISHERS
Daniel Newman
Founding Partner + Principal Analyst
Futurum Research

Shelly Kramer
Founding Partner + Principal Analyst
Futurum Research

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Netcracker was founded in 1993 and has been a
wholly-owned subsidiary of NEC Corporation since
2008. Driven by its focus on R&D, Netcracker's end-to-
end portfolio of BSS, OSS and Customer Engagement
products and related professional services enable
telecommunications and cable service providers,
utilities, financial services, logistics, and other business
services providers to transform their mission-critical
back office and front office processes. Netcracker
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and hybrid network operations.

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CONTACT INFORMATION

Futurum Research, LLC I futurumresearch.com I 817-480-3038 I info@futurumresearch.com
Twitter: @FuturumResearch