

FROST & SULLIVAN

NETCRACKER TECHNOLOGY

2022
TECHNOLOGY
INNOVATION
LEADER

GLOBAL
OSS/BSS INDUSTRY

Best Practices Criteria for World-Class Performance

Frost & Sullivan applies a rigorous analytical process to evaluate multiple nominees for each award category before determining the final award recipient. The process involves a detailed evaluation of best practices criteria across two dimensions for each nominated company. Netcracker Technology excels in many of the criteria in the global operations support system/business support system (OSS/BSS) space.

AWARD CRITERIA	
<i>Technology Leverage</i>	<i>Business Impact</i>
Commitment to Innovation	Financial Performance
Commitment to Creativity	Customer Acquisition
Stage Gate Efficiency	Operational Efficiency
Commercialization Success	Growth Potential
Application Diversity	Human Capital

Commitment to Innovation

Founded in 1993, US-based Netcracker Technology is a pioneer of innovative solutions that help more than 250 global mobile operators and service providers address their unmet needs and resolve challenges plaguing the telecommunications industry. The company is a wholly owned subsidiary of NEC Corporation and its portfolio includes business support systems (BSS), operations support systems (OSS), customer

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engagement, and extensive professional services. Few global companies in vertical industries, including telecommunications, truly embody such an innovative culture.

Within NEC, Netcracker is known for its innovative firsts in OSS/BSS, consistently spending more than its closest competitor on research and development (R&D) every year. Netcracker’s internal strength in innovation is a competitive edge based on its ability to help communications service providers (CSPs) reduce complexity, innovate quicker, and significantly alleviate deployment and operational costs. In 2021, the company showcased a clear differentiation from

its close competitors through a wide range of successful deployments globally. Netcracker’s 5G, cloud,

and digital OSS/BSS service offerings collectively helped CSPs drive the adoption of more innovative technology (such as for the digital economy) by equipping them with the speed, flexibility, and expertise needed to capitalize on rapidly evolving and emerging technologies, including 5G, Internet of Things (IoT), and industry automation. The company's leadership is attributed to its ability to achieve outstanding results with global CSPs despite the uncertainties and challenges.

Commitment to Creativity

An intense industry focus on digital services and the customer experience in challenging markets means that CSPs globally need to offer cost-effective and unique digital value propositions or digital solutions that can enhance the customer experience. To achieve this, CSPs need the basic fundamentals of innovation, business agility and flexibility, great levels of automation, and the ability to maintain costs at the right levels.

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Netcracker leverages technological advancements within innovative areas, such as private 5G networks, multi-cloud, and edge, to push the limits in the pursuit of white space innovation to meet customers’ unmet needs. Netcracker’s Non-Real-Time RAN Intelligent Controller (Non-RT RIC), Edge Service Orchestration, and cloud-native service offerings are driving growth for its core OSS/BSS service offerings and initiating greater digital transformation in an industry that has already benefited greatly from a series of large-scale digital transformation projects undertaken by

Netcracker for CSPs.

These technological advancements are bringing real tangible benefits to CSPs in the region by widening the scope for business model monetization and customer experience improvements. Netcracker combines extensive expertise, both internally and from its parent company (NEC), to drive innovation in the areas of OSS, RAN, and cloud, which competitors will find hard to replicate easily because they rely on their partners’ expertise to achieve the same thing. For example, Netcracker’s Non-RT RIC critically enables 5G RAN slicing and provides artificial intelligence/machine learning (AI/ML) support, intent-based automation, and standard O-RAN Alliance interfaces to raise the level of intelligence in RAN optimization and resource management.

Commercialization Success

The list of Netcracker’s customer success stories is long. The company is valued for truly appreciating its relationships with customers and its technology has a proven track record for efficiency, reliability, and scalability. A clear display of Netcracker’s commercialization capability is the use of its OSS/BSS solutions to drive automation, which is a key component in the global shift in the industry toward greater digital transformation.

In 2021, Netcracker's OSS/BSS increased the level of automation for many CSPs worldwide, including in the following areas:

- **Large-scale revenue management consolidation and transformation programs across global CSPs—including (but not limited to) NTT Corporation in Japan, du in the United Arab Emirates, Zain in Saudi Arabia, Virgin Media O2 in the United Kingdom, and Sri Lanka Telecom Group in Sri Lanka—are part of Netcracker's strategic Billing Consolidation Program, which covers both fixed and mobile businesses:** The program improved the efficiency of unified revenue management solutions and streamlined end-to-end billing operations, thereby facilitating the digital services that the group needed to compete in the digital economy.
- **Cloud-native Digital BSS solution including Revenue Management, Online Charging, Configure Price Quote (CPQ), Order management, Product Catalog, etc, for Altice in multiple countries, Telenet in Belgium, T-Mobile Netherlands, etc:** Netcracker's catalog driven software-as-a-service (SaaS) and cloud-based Digital BSS solution are highly automated, auditable, flexible and scalable. The solution can facilitate end-to-end business transparency and enhance the customer experience through minimized order fallouts, thereby ensuring faster time to market and lower overall total cost of ownership (TCO).
- **Lifecycle management for Globe Telecom in the Philippines plays a critical role in managing automated provisioning for fixed and mobile broadband and fixed wireless access (FWA) services:** Netcracker's Digital OSS suite has laid the foundation to enable a self-optimizing network at Globe Telecom, improving its agility and competitiveness with an end-to-end service orchestration solution and automation.
- **Operational processes and streamlined end-to-end service lifecycle management for Etisalat UAE and Deutsche Telekom in Germany will reduce the TCO for implementation and operations:** Netcracker's digital OSS improves the customer experience by reducing time to market for digital services, accelerating new revenue streams across B2B markets, enabling self-service channels, and allowing CSPs to offer partner-centric service offerings.

Financial Performance

Netcracker's financial results for OSS/BSS showed revenue growth in 2021. While competitors struggled due to reduced consumer spending and customer budgets across the world because of the COVID-19 pandemic, Netcracker continued its growth trajectory with an annual growth rate of 7% from 2019 to 2021. In contrast, the company's two closest competitors were able to recover to close to 2019 levels in 2021 at annual growth rates of 1.2% and 2.5% from 2019 to 2021. With its deep market knowledge and constant first-to-market technology innovation, Netcracker helps CSPs become more agile, innovative, and profitable. The company's continued strong overall financial performance reflects how well it meets customers' needs and expectations.

Customer Acquisition

Netcracker's customer-facing processes include customer upskilling that upskill for Agile; DevOps; multi-cloud and SaaS; and mentoring, coaching, and coordination that drive the customer's internal transformation toward self-sufficiency, such as at Joint Development Centers. Netcracker's tools help

CSPs develop custom code that can be plugged into core applications, while the pre-integration and pre-configuration of Netcracker's cloud-native IT applications with Amazon, Google, and Microsoft enable CSPs to assess Netcracker's solution capabilities, define additional configurations or integrations for further solution scalability, and benefit from on-demand scaling and cloud economics. Cloud solution scaling and expansion is therefore expedited, especially with Netcracker's Evergreen Enablement model that allows CSPs to benefit from guaranteed access to the latest features and components with minimal operational disruption, in addition to being an excellent OSS/BSS vendor strategy for customer retention.

Growth Potential

Over the years, the wholesale model with the InfraCo/NetCo approach has been increasingly adopted worldwide because of its value proposition for industry stakeholders. For investors, the faster return on investment (ROI) and greater capital expenditure (CAPEX) efficiency are attractive, and for service providers, the improved service quality and ability to go to market with digital services are invaluable at a time when the customer experience is considered as the top challenge. The wholesale model is not limited to mobile network infrastructure but is now implemented in other areas of the industry. For example, Salt and Swisscom have collaborated on fiber using Netcracker's solutions for its Swiss Open Fiber joint venture. In addition, BICS, a communications platform company, engaged Netcracker to optimize the fulfillment, provisioning, and assurance of its digital services.

Netcracker addresses the needs of the wholesale segment through its Netcracker Wholesale Infrastructure Solution (NWIS) business model. This model offers fast network infrastructure rollout, easy customer onboarding, and automated service operations that help customers increase operational efficiency and promote innovation. Tailored specifically to cater to wholesale operational needs, NWIS facilitates fast market expansion with a lower TCO, lean end-to-end service automation, and native multi-tenant support. Moreover, the business model securely integrates and operates with customers' facing systems and supports multi-currency, multi-language, and multi-taxation. As such, with enabling solutions, this segment has a tremendous growth opportunity for Netcracker to tap into within the next 5 years.

Conclusion

Netcracker's OSS/BSS solutions have helped CSPs worldwide launch new initiatives, establish new revenue streams, and drive intent-based automation and agility across their mobile networks and partner ecosystems. The company's customer success stories are a testament to the technology innovation behind the success of its products, solutions, and delivery in meeting customers' needs. Netcracker's customer-facing processes, Evergreen Enablement model, and NWIS will help the company retain its loyal customer base.

With its strong overall performance, Netcracker Technology earns Frost & Sullivan's 2022 Global Technology Innovation Leadership Award in the OSS/BSS industry.

What You Need to Know about the Technology Innovation Leadership Recognition

Frost & Sullivan's Technology Innovation Leadership Award recognizes the company that has introduced the best underlying technology for achieving remarkable product and customer success while driving future business value.

Best Practices Award Analysis

For the Technology Innovation Leadership Award, Frost & Sullivan analysts independently evaluated the criteria listed below.

Technology Leverage

Commitment to Innovation: Continuous emerging technology adoption and creation enables new product development and enhances product performance

Commitment to Creativity: Company leverages technology advancements to push the limits of form and function in the pursuit of white space innovation

Stage Gate Efficiency: Technology adoption enhances the stage gate process for launching new products and solutions

Commercialization Success: Company displays a proven track record of taking new technologies to market with a high success rate

Application Diversity: Company develops and/or integrates technology that serves multiple applications and multiple environments

Business Impact

Financial Performance: Strong overall financial performance is achieved in terms of revenues, revenue growth, operating margin, and other key financial metrics

Customer Acquisition: Customer-facing processes support efficient and consistent new customer acquisition while enhancing customer retention

Operational Efficiency: Company staff performs assigned tasks productively, quickly, and to a high-quality standard

Growth Potential: Growth is fostered by a strong customer focus that strengthens the brand and reinforces customer loyalty

Human Capital: Commitment to quality and to customers characterize the company culture, which in turn enhances employee morale and retention

