Netcracker GenAI Telco Solution: Using Knowledge and Trust to Boost the Value of Generative AI in Telecom

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Netcracker
An NEC Company

SEPTEMBER 2023

Overview

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Communications service providers (CSPs) are swiftly expanding their exploration of generative AI models to improve business outcomes including significant advancements in productivity across their entire telco business. Generative AI is powered by training neural networks on massive volumes of data and applying techniques that assist AI models in determining the information to focus on and prioritize. Through such techniques, a generative AI system can identify word patterns, relationships, and the context of a user's prompt, making generative AI systems impressive human-like communicators.

One of the expected early implementations of generative AI in telecom is to transform the chatbox experience. Up to 90% of consumers find existing chatbot interactions frustrating or negative, with 30% of users driven away by one negative chatbot experience, according to Forbes. With investments in generative AI technology, digital assistants can take on more complex questions, resolve issues faster, and provide valuable support to customer care agents.

However, we discern that generative AI can become transformative throughout the telco domain only through complete integration with telco business support system/operations support system (BSS/OSS) and data analytics systems. In fact, we identify that up to 90% of generative AI-driven telco use cases require BSS/OSS data. As such, we see the foremost challenge across the telco industry is ensuring that generative AI public models have secure and controlled access to this data to meet the telecom industry's unique requirements.

We find that BSS/OSS integration with generative AI models can prove challenging. Specifically, three concerns can swiftly limit the effectiveness of generative AI models in creating contextual new content for CSP business objectives. We identify such concerns as including:

Public Generative AI Model Security Shortfalls: As we have seen across the entire digital ecosystem, advanced large language models (LLMs) can produce impressive results; however, they are unsecure and cannot be trained on confidential data. They are also prone to producing widely inaccurate information or hallucinations further limiting their applicability.

Fine-Tuning a Public Model with Telco Data Is Insufficient: One clear barrier for telcos in using generative AI models is that they cannot be fine-tuned on real-time or constantly changing telco data, which makes up a large proportion of telco data. In addition, today's generative AI models have no telco business knowledge, and telcos rightly refuse to risk compromising the safeguarding and integrity of their OSS/BSS data.

Advanced Private Generative AI Models Are Very Expensive: Some CSPs might decide to build their own private generative AI models in house to avoid the security and control issues related to public models. However, to achieve the impressive capabilities of LLMs such as ChatGPT, a significant investment is needed to train and run these models. According to OpenAI, the training of GPT-4 costs more than $100 million, with daily running costs of over $700K. To most telcos, this investment is very expensive for a technology whose business value remains unproven. South Korea's SKT has opted for this approach and is investing $100 million with AI specialist Anthropic to build a telecom focused LLM.

In this paper, we take a deep dive into the Netcracker GenAI Telco Solution, our findings, and why we believe that the solution meets the challenges of adopting generative AI technology and delivers the telco-specific knowledge essential to making generative AI effective and successful for telcos. Netcracker GenAI Telco Solution uses Netcracker's extensive presence and influence across the telecom IT realm, ensuring that generative AI models directly benefit from the data originating from the telco's BSS/OSS. From our view, Netcracker is optimally positioned to unite the power of generative AI to telco BSS/OSS platforms that can power breakthroughs in advancing top CSP strategic priorities such as increasing productivity and improving business outcomes.

Netcracker GenAI Telco Solution Introduction:
## The Vital Bridge Between GenAI and Telco Data and Knowledge

The Netcracker GenAI Telco Solution builds on Netcracker's Digital Platform, which is extensively deployed across top-tier CSP global networks such as NTT, Vodafone, Telefonica, Verizon, and Deutsche Telekom. The vast footprint of Netcracker Digital Platform is impressive and attests to the company's ability to provide the telco knowledge and innovation engine that we see as key to connecting the power of generative AI with BSS/OSS to deliver the exceptional value unique to telco needs.

Specifically, our team here at The Futurum Group believes Netcracker's deep telecom IT domain expertise gives the company a significant advantage in bringing the telecom know-how and integration expertise to build and deliver high-value use cases that will have a greater impact on the business. In addition, most of the data and functionality required to build generative AI use cases come from BSS/OSS where Netcracker Digital Platform plays an integral role in ensuring the credentials and capabilities of the Netcracker GenAI Telco Solution.

Netcracker GenAI Telco Solution:
Making Generative AI Highly Valuable to Telcos

- **High-Quality Generative AI Model Enrichment:** The solution enriches generative AI models with personalized prompts that provide all data, context, and instructions key to providing the best generative AI model results. This functionality ensures a reliable flow of high-quality content and dialogs that are specific to meeting telco business needs.

- **Robust Security to Protect Sensitive Telco Data:** Telcos will brook no compromise in protecting their sensitive data including ensuring that no sensitive telecom data is released to public generative AI models. Netcracker's solution fully embeds ground-zero security to deliver the robust security essential to meeting telco security requirements.

- **Accurate and Relevant Results:** The platform incorporates a comprehensive observability framework to ensure the quality and relevance of interactions.

- **Unified Approach for Any Generative AI Model:** The Netcracker GenAI Telco Solution is designed to leverage the best combination of generative AI models that consistently attain optimal business outcomes and value for telcos specifically.

Netcracker GenAI Telco Solution Overview
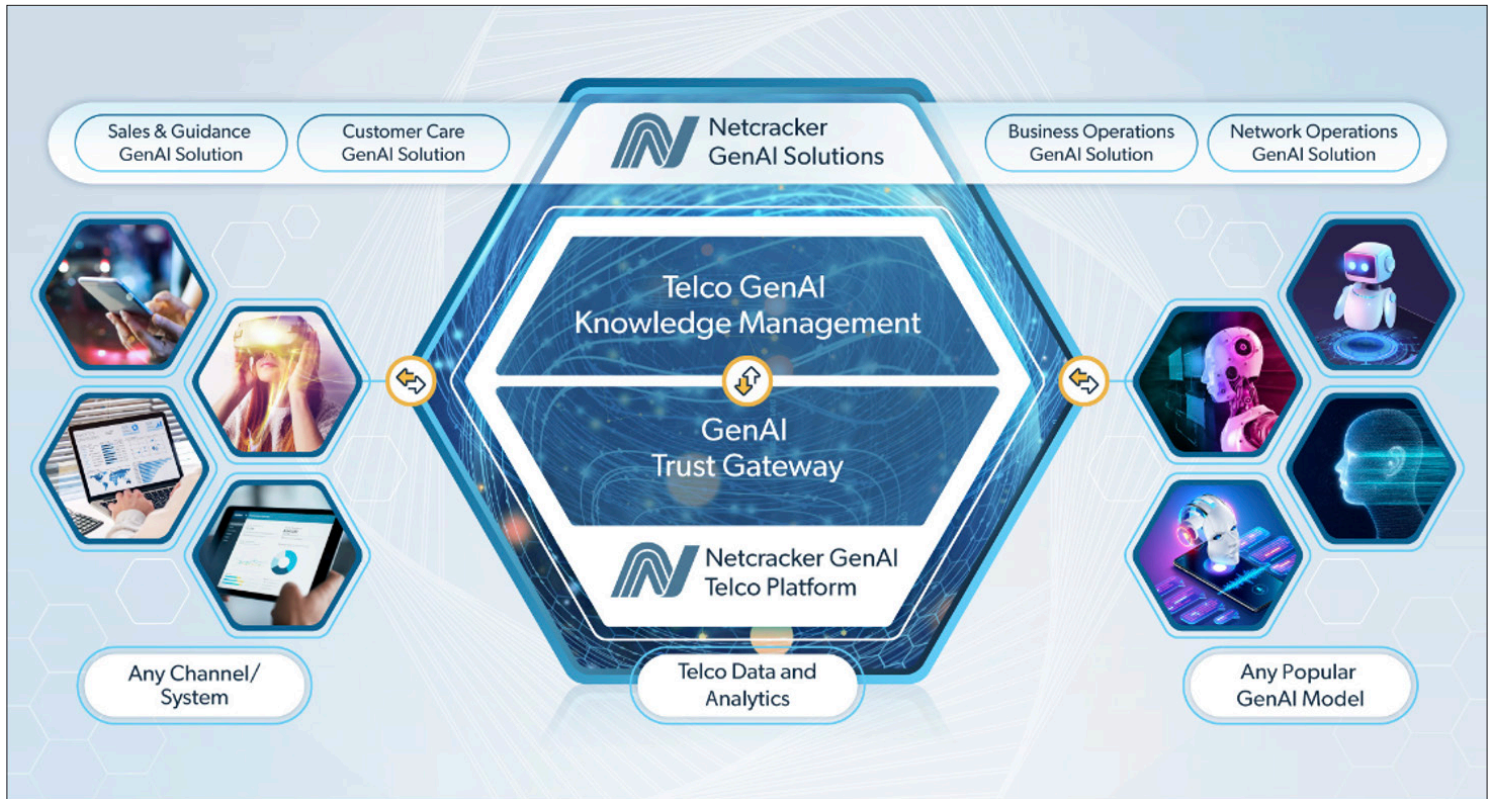
Source: Netcracker

The Netcracker GenAI Telco Solution platform is developed to perform the pivotal role of securely bridging any telco channel or system, including those of partners and customers, with any popular generative AI model or system, including generative AI model aggregators such as Microsoft, AWS, and Google Cloud as well as generative AI model specialists such as Meta AI, Cohere, OpenAI, Hugging Face, Anthropic, and Stability AI. The platform consists of two fundamental components:

- Telco GenAI Knowledge Management
- GenAI Trust Gateway

Through the two key components of the platform, domain-specific Netcracker GenAI solutions, such as the Sales & Guidance GenAI, Customer Care GenAI, Business Operations GenAI, and Network Operations GenAI solutions, can bring productivity improvements across the business.

Of key importance, Netcracker BSS/OSS and data analytics, in combination with third party BSS/OSS, provide the multivendor telco data that underpins the integrity of the Netcracker GenAI Telco Solution platform and the overall fidelity of the generative AI process.

From our view, deeper understanding of the Telco GenAI Knowledge Management and the GenAI Trust Gateway components can sharpen the full value of the overall Netcracker GenAI Telco Solution.

Telco GenAI Knowledge Management: Creating High Value Scenarios

Netcracker's Telco GenAI Knowledge Management capability is developed to use the company's vast OSS/BSS expertise and 30+ years BSS/OSS experience to power value creation and business outcome improvement.

Telco GenAI Knowledge Management has two central components: Design Studio/Playground, which creates and modifies assist scenarios and executes simulations, and Knowledge Base modules, which have a library of over 40 telco-specific assist scenarios. The assist scenarios incorporate the instructions, prompts, and data functions needed for building personalized generative AI prompts. We expect that through fine-tuning, scenario optimization can be attained.

GenAI Trust Gateway: Operationalizing Telco Processes with AI

Vital to Netcracker GenAI Telco Solution is the GenAI Trust Gateway, which educates the generative AI models in real-time through personalized prompts. The Gen AI Trust Gateway understands the user intent, builds the enriched prompts, and applies robust security and control to ensure the secure operationalization of generative AI-infused telco processes.

We discern that through continuous interaction with Telco GenAI Knowledge Management, channels and systems both internal and external to the telco, and generative AI models, telcos can substantially improve their operations. For security, machine learning (ML)-based detection and obfuscation protects customer data and reinforces all-important confidentiality. Observability is augmented with checks and controls for correctness and relevance to the given context. Telco-specific operational analytics are further strengthened with 360-degree analytics for key performance indicators (KPIs) and operational metrics.

Meeting Critical Business Needs Across Top Value Use Cases

Bringing together Telco GenAI Knowledge Management and GenAI Trust Gateway addresses the most critical needs of telcos. As we observed, the Netcracker GenAI Telco Solution platform includes the four main domains of Sales & Guidance GenAI, Customer Care GenAI, Business Operations GenAI, and Network Operations GenAI. From our perspective, each of the four domains warrants a more granular view to better understand the full value of how Netcracker GenAI solutions can drive a diverse, evolving array of assist scenarios (40+ initially) for high-value use cases. The granular views consist of:

- **Sales & Guidance GenAI solution:** Leading capabilities include Digital Sales Adviser B2C, Digital Sales Adviser B2B, and Telco Ecosystem Guide aimed at equipping telco sales teams with generative AI assistance to speed personalized recommendations and sales conversions.

- **Customer Care GenAI solution:** Key capabilities include Customer Care Assistant, Business Assistant B2B, and Agent Partner B2C targeted at substantially improving call center efficiency and resolving complex customer issues faster.

- **Business Operations GenAI solution:** Principal capabilities consist of Business Analyst Assistant, Marketing Communicator, and Catalog Assistant to rapidly speed business operations in areas including churn reduction, catalog configurations, and new marketing campaigns.

- **Network Operations GenAI solution:** Prominent capabilities encompass a digital operations technician, automated service spec redesign, prompt-driven network design, and network autopilot that focus primarily on increasing levels of operations automation and increasing work efficiency.

With generative AI using real-time data from their BSS/OSS, telcos can achieve more efficient and effective processes and customer interactions, ensuring that they make the most out of adopting and applying GenAI technology.

Netcracker GenAI Telco Solution: Delivering Unique Generative AI-driven Telco Benefits

Netcracker GenAI Telco Solution is focused on aiding CSPs in achieving the full potential of generative AI by directly leveraging their BSS/OSS environments. Netcracker cites the potential benefits of its solution to include:

- **Twofold Faster Introduction of Generative AI:** Using Netcracker GenAI Telco Solution, we find that CSPs can attain faster BSS/OSS integration safeguarded by robust security and the rapid availability of high-quality and intricate use cases.

- **Halving of Call Center Costs:** With the Netcracker GenAI Telco Solution, CSPs can improve KPIs such as first contact resolution and time to resolution plus reduced cost per contact that can result in a better net promoter score, boost in customer satisfaction, and higher customer effort score.

- **35% Improvement in Productivity:** Through Netcracker GenAI Telco Solution, CSPs can catalyze the creation of business ideas, decrease reliance on technical specialists for configuration and business analysis, and increase overall self-sufficiency.

- **60% Fewer Network Performance Issues:** By adopting Netcracker GenAI Telco Solution, CSPs can automate more of their network planning and design, accelerate configuration processes, and speed the design and testing of new services.

From our view, Netcracker has crafted compelling out-of-the-box use cases that address immediate telco business needs, which can accelerate generative AI adoption and realize commercial benefits with built-in time-to-value advantages.

Netcracker GenAI Telco Solution: Conclusions and Takeaways

Netcracker GenAI Telco Solution is fully aligned to meet the unique demands of CSPs in using generative AI to deliver better value to their customers and bolster business outcomes. The top operational and business process benefits we identify reinforce the unique advantages that CSPs can gain from adopting Netcracker GenAI Telco Solution. In sum, we identify six core benefits that demonstrate why Netcracker GenAI Telco Solution is best suited to drive telco adoption of generative AI:

- **Deep IT Telecom Domain Expertise:** Netcracker is thoroughly embedded throughout top-tier global networks, backed by over 30 years of deployment experience, validating its IT telecom portfolio credentials.

- **Exceptional BSS/OSS Influence:** In our estimation, Netcracker BSS/OSS is deployed by more CSPs than any other vendor, showing that the company commands the market presence and influence to power CSP adoption of generative AI technology.

- **Technology Innovation:** We see Netcracker commitment to continuous innovation is demonstrated by its R&D investment strategy that underpins organic portfolio development on a consistent basis.

- **Top Quality Model Enrichment:** From our perspective, Netcracker's BSS/OSS portfolio heritage and innovation DNA ensures the development of the personalized and thorough prompts key to ensuring the best generative AI results.

- **Comprehensive Security from Public LLMs:** Netcracker's extensive track record in safeguarding CSP data provides the built-in assurance that no sensitive telecom data is released to public generative AI models.

- **Unified Support for Any Generative AI Model:** Netcracker GenAI Telco Solution is developed on the core principle of using the best model combination to deliver optimal value for telco-specific use cases and requirements.

Overall, we believe that Netcracker GenAI Telco Solution can fulfill the unique generative AI needs of CSPs by potentially increasing productivity across the entire telco organization, especially the customer care, sales and guidance, business operations, and network operations domains. As a result, CSPs should give Netcracker GenAI Telco solution their topmost consideration in selecting an offering that can securely connect the power of generative AI with their BSS/OSS to realize dramatic breakthroughs in business value creation and improved business outcomes.

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