# Al-powered cybersecurity for telecom



Capgemini Research Institute 202

# Evolving threat landscape for the telecom organizations

The threat landscape for telecom organizations is evolving rapidly. With the continued rollout of 5G networks, the expansion of digital services, and widespread adoption of cloud computing, the number of attack vectors and endpoints has surged, presenting more opportunities for cybercriminals. Our research indicates a sharp increase in security breaches: 46% of telecom organizations reported a significant breach in 2021, rising to 86% by 2023 (see Figure I).

Over the past year, approximately 90% of surveyed telecom organizations reported an increase in security incidents related to cloud services (notably, vulnerabilities in the public cloud), while 78% faced machine-speed attacks, such as ransomware and other automated threats.

### Figure I.

Significant increase in cybersecurity breaches in telecom organizations from 2021 to 2023



N=1,000 organizations, N=80 organizations in the telecom sector.

## Strengthening telecom industry's cybersecurity through AI and Gen AI integration

To address the growing threat landscape, telecom organizations are adopting various cybersecurity technologies (e.g., blockchain, cloud encryption) to defend against attacks. However, our research shows that nearly two-thirds of global telecom organizations now prioritize integrating AI into their cybersecurity strategies (see Figure II).

### Figure II.

Nearly two in three telecom organizations prioritize AI integration into cybersecurity



Source: Capgemini Research Institute, AI and Gen AI in cybersecurity survey, May 2024, N=1,000 organizations, N=80 organizations in the telecom sector.

New defenses, new threats: What AI and Gen AI bring to cybersecurity

The potential of Gen AI in cybersecurity is also promising, with 65% of organizations surveyed expecting positive long-term outcomes. Additionally, more than 70% believe their security strategies need an overhaul with the emergence of Gen AI.

Our research identified the top three Gen AI-based cybersecurity use cases currently in the proof-of-concept (POC) stage among telecom organizations: Vulnerability Assessment (63%), Data Deidentification (54%), and Threat Intelligence Generation (54%).

### Examples of how telecom organizations are leveraging AI and Gen AI to address security challenges include:

- Vodafone has deployed an AI-driven system on the public cloud, using advanced machine learning algorithms to detect and correct anomalies before they affect customers.<sup>i</sup>
- AT&T has integrated Gen AI across its workforce, enabling over 68,000 employees to use the Ask AT&T tool for tasks such as coding, customer assistance, meeting summaries, and patching security vulnerabilities."
- At Mobile World Congress 2024, Nokia introduced an enhanced version of its NetGuard Cybersecurity Dome software, featuring a Gen AI-powered assistant tailored for communications service providers (CSPs) and enterprises.

"We believe Gen AI can play a pivotal role in enhancing network security."

#### Arvind Khurana,

Regional Vice President and Country Head for Cloud and Network Services at Nokia India

# Building the right partnerships for smarter AI adoption

While telecom organizations view AI and Gen AI as essential for faster threat detection, these technologies also present new security risks. Nearly threequarters (73%) of telecom organizations surveyed are concerned about potential data leaks or intellectual property theft during Gen AI model training, and over two-thirds (69%) are wary of data poisoning through AI manipulation.

# Examples of how telecom organizations are mitigating these concerns through Gen AI adoption include:

- Deutsche Telekom developed a code leakage prevention system that "obfuscates" code, making it unreadable to humans but machine-readable. This approach prevents proprietary information within internal code from being absorbed by Gen AI models during accuracy checks, thus enhancing security.<sup>iv</sup>
- BT Group created "GenAI Gateway," an internal platform in partnership with AWS that enables staff to securely use multiple large language models (LLMs), including those from Anthropic, Meta, and Amazon. A consolidated platform minimizes duplication and streamlines resources as the organization scales Gen AI adoption."

"There are potential risks associated with generative AI. The use of unsupervised models trained on existing data can inadvertently lead to copyright infringement, deep fakes, and misleading content. To mitigate these risks, we place a strong emphasis on governance and caution, ensuring that customer data, source code, and proprietary information are not provided to AI models."vi

#### **Muthusriram Rengasamy,** Associate Director of System Architecture at Verizon India

To ensure effective AI adoption in cybersecurity, telecom organizations should seek partnerships that offer access to specialized expertise, advanced technology, and support in building robust cybersecurity strategies. Strategic partners can also facilitate faster, safer implementation in line with regulatory requirements and deliver comprehensive threat intelligence.

Our research highlights that the primary areas where telecom organizations engage consulting and systems integration (SI) partners for AI-driven cybersecurity include strategy and roadmap development (70%) and solution implementation and integration (55%).

Please feel free to reach out to us for a more comprehensive perspective on AI integration in telecom cybersecurity.

We would be delighted to provide further insights.

## For more information on telecom-specific insights, contact:

### **Praveen Shankar**

Global Head of Telecom Industry praveen.shankar@capgemini.com

#### Cheryl Martin

Head of Cyber Security Practices UK cheryl.a.martin@capgemini.com

<sup>1</sup>Vodafone, "Vodafone and Nokia Develop Machine Learning System to Detect Mobile Network Anomalies," July 2021. <sup>1</sup>Mobile World Live, "Feature: How GenAI is transforming AT&T," December 2023.

"DQIndia, "Arvind Khurana from Nokia on How CSPs are Leveraging GenAI in their Services," June 2024.

"Telco Titans, "Deutsche Telekom live with AI-based RAN "sleep mode" efficiency trials," April 2024.

"BT, "BT Group's Digital Unit launches 'GenAI Gateway' platform, powered by AWS, accelerating the company's safe adoption of generative AI at scale,"

September 2024.

<sup>vi</sup>AIM, "How will GenAI Help Verizon Revolutionise Telecom?" June 2023.

