
Summary

This brief report explores the transformative potential of generative artificial intelligence (Gen AI) in two specific telco domains. The report also discusses the in-house Gen AI development efforts of telcos, workforce trends arising from Gen AI implementation, regulatory impact of telcos deploying Gen AI, and the role of vendors in successful integration and adoption of the technology.

Ever since Gen AI burst into the mainstream through public-facing platforms (e.g. ChatGPT) late last year, its groundbreaking capabilities have caught the attention of many. Not surprisingly, telecom industry execs are among the curious observers wanting to try Gen AI even as it continues to evolve at a rapid pace. The telecom industry's bond with AI is not new though. Many telcos have deployed conventional AI tools and applications in the past several years, but Gen AI presents opportunities for telcos to deliver significant incremental value over existing AI. A few large telcos have kickstarted their quest for Gen AI by focusing on "localization". Through localization of processes using Gen AI, telcos vow to eliminate language barriers and improve customer engagement in their respective operating markets, especially where English as a spoken language is not dominant.

Telcos can harness the power of Gen AI across a wide range of different functions, but the two vital telco domains likely to witness transformative potential of Gen AI are networks and customer service. Both these domains are crucial: network demands are rising at an unprecedented pace with increased complexity, and delivering differentiated customer experiences remains an unrealized ambition for telcos. Several Gen AI use cases are emerging within these two telco domains to address these challenges. In the network domain, these include topology optimization, network capacity planning, and predictive maintenance, for example. In the customer support domain, they include localized virtual assistants, personalized support, and contact center documentation.

Most of the use cases leveraging Gen AI applications involve dealing with sensitive data, be it network-related or customer-related. This will have major implications from the regulatory point of view, and regulatory concerns will constrain telcos' Gen AI adoption and deployment strategies. The big challenge is the mosaic of complex and strict regulations prevalent in different markets that telcos will have to understand and adhere to when implementing Gen AI use cases in such markets. This is an area where third-party vendors will try to cash in by offering Gen AI solutions that are compliant with regulations in the respective markets. Vendors will also play a key role for small- and medium-sized telcos in Gen AI implementation, by eliminating constraints due to the lack of technical expertise and HW/SW resources, skilled manpower, along with opex costs burden. Key vendors to watch out for in the Gen AI space are webscale providers who possess the ideal combination of providing cloud computing resources required to train large language models (LLM) coupled with their Gen AI expertise offered through pre-trained models.

Telcos surf the Gen AI wave

Artificial intelligence (AI) in the telecom industry is not a recent development, as telcos have been among the early adopters of the technology in their journey to digital transformation. The current AI models and applications deployed by telcos primarily analyze data to assist in decision making along with some level of predictions. For instance, predicting purchase likelihood based on buying patterns, or providing pre-set responses to customers based on pre-defined questions. These applications are, however, designed