Futurenet Webinar Q&A Highlights

Unlocking Autonomous Networks: The Power of Knowledge-Driven AI to Deliver Level 4

Moderated by Charlotte Partrick, experts from Telefónica, Liberty Global, Telenor, and Vitria Technology discussed how to accelerate Telcos' path to higher autonomy through structured knowledge and the power of AI.

Charlotte Patrick,
Independent
Industry Analyst

Afnan Ahmed,
Director Technology
Strategy & Architecture,
Telenor

Assen Golaup,
Senior Manager 5G
Mobile Access Strategy,
Liberty Global

José María Ramón Pardo,
Autonomous Networks & AI
Senior Manager, Telefónica

Dale Skeen,
Vitria Technology, Chief Technology
Officer and Co-Founder of
Vitria Technology

WHAT IS THE CONCEPT OF KNOWLEDGE-DRIVEN AI?

Dale Skeen of Vitria explained, "By knowledge, we mean structured knowledge that is human to machine readable and shareable between humans and AI. For human consumption it is often represented as a knowledge graph. Knowledge for Telcos needs to include; dependencies between layers in the networks topologies both learned and inferred dependencies such as failure patterns between components; diagnostic knowledge about the key symptoms and likely fixes; and contextual knowledge about the physical facilities, the geographic locations, the environmental and weather conditions."

Dale explained that when you add structured knowledge to AI, the AI agents get smarter and produce more accurate results with fewer hallucinations. Additionally, the AI recommendations are explainable in terms of a knowledge graph and verifiable by another AI or by a human.

WHAT TYPE OF AI AND ML HAVE YOU DEPLOYED OR DO YOU PLAN TO DEPLOY SOON AND IN WHAT DOMAINS AND PROCESSES?

Telefónica is leveraging ML for early fault detection, degradation prediction, root cause analysis, capacity planning, demand forecasting, improving energy efficiency and aligning consumption with real traffic demand. Liberty Global reports that machine learning has been embedded in many of their processes around fault management and run optimization. Regarding AI, Liberty Global began their AI journey by understanding the data maturity within their opcos for implementing AI. For Telenor, the focus is assurance, RAN assurance, fault management, and energy efficiency.

Unlocking Autonomous Networks: The Power of Knowledge-Driven AI to Deliver Level 4

IN TERMS OF THE TM FORUM AUTONOMOUS NETWORK MATURITY MODEL, WHAT LEVELS HAVE YOU ACHIEVED AND IN WHAT DOMAINS AND PROCESSES?

Afnan Ahmed of Telenor reports that: "The domains which are a pain point for everyone are more access related or service assurance related." Liberty Global's Assen Golaup indicates that their operators are already aware of which scenarios they need to tackle first to achieve level four automation and obtain the best or the most valuable outcome. Liberty Global is starting with the core network domain and the fault management process but acknowledged that to achieve level four capabilities requires fault management across multiple domains and closed loop control. Jose Maria Ramon of Telefónica indicated that they have an objective to reach level 4 in 2030 but that it may not be cost effective to reach level 4 in every process.

WHAT ARE THE KEY BENEFITS OF REACHING LEVEL FOUR?

Afnan Ahmed of Telenor summarized the key benefits as improving efficiency to reduce opex and becoming more energy efficient. He believes that improving the customer experience, increasing service adoption, and generating new revenue streams are needed to gain the investments required to achieve level 4.

WHAT ARE YOUR PLANS IN SUPPORTING KNOWLEDGE DRIVEN AI?

Assen explained Liberty Global's plans around three themes. First having the right framework in place to centralize data and cure data to have AI ready data sets. Second is capturing operator knowledge so that AI can operate more effectively. Third is gaining a representation of your network that AI can understand.

Afnon Ahmed of Telenor described the need to manage data and correlate it in a better way across domains, within service levels and at the business levels.

IN TERMS OF KNOWLEDGE DRIVEN AI, CREATING NEW KNOWLEDGE ASSETS, WHAT ARE YOU PILOTING AND WHAT HAVE YOU DEPLOYED ALREADY?

José María Ramón Pardo of Telefónica reported that early fault detection, degradation prediction, RCA, capacity/demand forecasting, and energy optimization are the most mature and that they are continuing to scale ML, intelligent agents and digital twins across domains.

Assen Golaup of Liberty Global described progress in cross-domain Service Impact Analysis within the change management process, Root Cause Analysis beginning in the core, and an end-to-end VLAN orchestration with self-healing.

Afnan Ahmed of Telenor reported deploying self-healing in IP/transport, bespoke RAN energy-savings models, and is piloting AI agents for first-line NOC.

VITRIA'S DEMONSTRATION OF A USE CASE DEPLOYING AI WITH KNOWLEDGE

Dale Skeen of Vitria used an example of triaging and diagnosing router failures on a 5G mobile network. He demonstrated how AI with knowledge provides better reasoning using various sources of knowledge – logical connections, shared knowledge across AI agents and between AI and humans, and the use of knowledge graphs which are persistent from generation to generation. Dale explained how knowledge is crucial to building trust and accuracy in AI and accelerates the journey to level four.

ABOUT VIA AIOps

VIA AI powers VIA AIOps to deliver the process automation capabilities required to transform operations and dramatically lower cost. VIA delivers intelligent automation from a powerful platform that combines AI, analytics, and machine learning in real time. VIA provides Telcos with a modern operating model that enables a superior customer experience and supports a leaner, more efficient, and effective operations staff.

Vitria, the Vitria logo, vitria.com are registered trademarks of Vitria Technology, Inc., a Delaware corporation, with operations and office locations around the world. VIA AIOps, the VIA AIOps logo, VIA AI, and the VIA AI logos are trademarks of Vitria Technology, Inc.