LG UPLUS: INNOVATING 5G SERVICES WITH REAL-TIME CUSTOMER DATA DRIVES DIGITAL TRANSFORMATION

IMPACT

- Improved customer center network response quality from 2 days to 5 minutes
- Increased capacity from 13 million LTE subscribers to 17 million 4G/5G total and 5 million home/business service users
- Improved quality log processing from 100TB a day to 400TB a day
- Reduced service indicators generating, alerting and monitoring time to 1 minute
- Increased work efficiency and Net Recommended Customer Index (NPS) by more than 10 percent
- Through DevOps configuration, AI/Big Data DX function application period – which takes about 2 months from analysis to operation application – is reduced to less than 2 weeks

Introduction

LG Uplus Corporation, a South Korean telecommunications service provider owned by LG Group, launched the world's first 5G service. The company provides innovative 5G services to meet customer's changing needs based on data analysis of customer experiences, content preferences, and usage patterns of devices, networks, and locations. With almost 17 million total wireless subscribers and having acquired 3.5 million 5G subscribers, LG Uplus is an innovator and leader in its industry.

Challenge

"The company was challenged with a variety of data needs in order to be prepared internally to analyze various 5G services. This included a new big data system that could easily accommodate data from not only 5G but also from existing LTE services, which needed to be established to realize digital transformation (DX) based on integrated wired and wireless customers. Additionally, we needed to be prepared to carry out a very large number of digital transformation tasks for our customers," said Jinsoo Jang, Team Leader of LG Uplus NMS Development Team.

Innovation reputation. If LG Uplus failed to maintain its reputation for innovation, it would lose its initial momentum in a highly competitive market. The company needed reliable high-quality services to maintain the 5G service as an essential pillar of telecom for the future.

Existing platform limitations. The existing big data platform's architecture had limitations, in terms of data acceptance, analytics and application. due to its own architecture. These limitations created the risk of being unable to analyze the various elements of the 5G service as effectively as existing wired and wireless services, which would result in poor customer service and reputational damage in the market.

5G commercialization. It was a challenge to prepare for the 5G commercialization as South Korea was pushing for the first commercial service globally. To achieve this the company needed to monitor how 5G services worked and respond to customer needs.

For LG Uplus, meeting these challenges would not only accelerate the digital transformation for customers but also enable the company to gain a competitive edge.

17M

Wireless(4G/5G) users

"LG Uplus launched 5G service for the first time in the world and is providing innovative services to meet ever-changing needs of customers through data analysis. To this end, we established NRAP, which reduced network operating costs, improved overall operation, and supported LG Group to implement digital transformation"

– Jinsoo Jang, Team Leader of LG Uplus NMS Development Team

About Cloudera

At Cloudera, we believe that data can make what is impossible today, possible tomorrow. We empower people to transform complex data into clear and actionable insights. Cloudera delivers an enterprise data cloud for any data, anywhere, from the Edge to AI. Powered by the relentless innovation of the open source community, Cloudera advances digital transformation for the world's largest enterprises.
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Solution

With Cloudera's enterprise platform, LG Uplus established both NRAP (Network Real-time Analytic Platform) for 5G network operation and NAVIS (Network Analysis & Visualization System), a dedicated analysis environment for DX acceleration of in-house data scientists. This improved the limited environment where the existing LG Uplus monitoring system mainly used equipment-based data to monitor LTE and wired services. It became a turning point for technology innovation to enable near real-time (minute-by-minute) monitoring by service/customer using all customer data. By utilizing customer data that did not exist before, it was possible to develop various AI/BigData tasks and analyze the results, providing a DevOps-based big data environment developers and analysts can use flexibly to provide completely differentiated functions from existing services. In addition, it was able to lead LG Uplus DX innovation related to the network.

"NRAP stores a variety of highly applicable data sources and modifies them into meaningful data. In turn, LG Uplus business sectors (including service monitoring, customer quality analysis and correspondence) and AI (which discovers fundamental causes of problems, predicts performance, and recommends appropriate measures) are greatly in demand to apply NRAP to DX projects and other uses," said Jinsoo Jang.

Results

All processes are distributed across 350 Cloudera nodes and processed in less than a minute in near real-time (more than 400TB/day). Currently, users can get desired data results without having to think about the amount of data being processed internally. As a result, NRAP's big data platform can now accommodate 17 million 4G/5G total and 5 million home/business service users, compared to only 14 million LTE subscribers. It has also shortened service-based monitoring time down to one minute.

In the previous 4G environment, with 300 indicators using collected data, It took anywhere from a few hours to a few days to find detailed network performance information due to the lack of access. The number of indicators has increased to more than 5,000, providing XDR for end-to-end (E2E) analysis that allows LG Uplus to easily and accurately find the cause of service quality problems.

In addition, to improve data-based advanced decision making, an analysis platform for efficiently discovering performance flaws segmented into customer, network, and data service units were built based on Cloudera technology (CDP/CDSW). Using this, AI-based model analysis can be performed, enabling preemptive quality responses to customer service issues.

LG Uplus has also introduced an AI function to operate and expand the automatic detection of network failure root causes and network quality prediction. The company has integrated the AIOps model with its own AI technology, and advanced and commercialized the AI network operation function of its NMS3.0 through global Telco AI technology, consultation, and benchmarking.

With the introduction of its 'NRAP, LG Uplus is proceeding to adopt the Cloudera Data Platform (CDP) with an optimal plan for minimizing No Service to enable more efficient use and management of data in the cloud, as well as ensuring the security and governance of data. The integrated platform was built and has been continuously modernized for the purpose of data lakes, data warehouses, and data farm.

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Cloudera, Inc. 5470 Great America Pkwy, Santa Clara, CA 95054 USA. cloudera.com