How will Artificial Intelligence help mobile operators provide customers with the best quality of experience?

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 # CONNECTIVITY

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Putting customer perception at the center of their network expansion strategy is business critical for MNOs. Artificial Intelligence will allow to be more proactive in network planning and customer care.

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In our hyper-connected world, customer connectivity expectations soar as more and more services become accessible via smartphones. Combining subscriber experience monitoring with Artificial Intelligence (AI) can provide a decisive advantage to anticipate these growing connectivity needs. This development will allow mobile network operators (MNOs) to be more proactive in network planning and customer care – boosting customer confidence.

- Putting customer perception at the center of a network expansion strategy is business critical for MNOs.
- AI will help enhance network planning with field data analysis for optimized investment.
- Machine learning algorithms are now available to anticipate the quality of experience in new or less populated areas.

Customer experience rules

In recent years, the role of telecom providers has evolved drastically. While they were once chosen based on content, services and competitive pricing; today one of the key criteria that differentiates one provider from another is the reliability of the connectivity service and the bandwidth they provide.

In this new landscape, where customer perception is king, the race to expand and upgrade networks is fierce,

representing up to 75%* of a MNO's yearly budget. This is true not only in European and US markets on the verge of 5G connectivity, but also in maturing markets heavily invested in 3G expansions and 4G launches. In fact, the GSMA, the worldwide association of MNOs, estimates that 72% of carriers will invest in 3G, 4G or 5G networks between 2019 and 2021.

Understanding customer perception

While we chat or click away on our smartphones for the greater part of the day, we're blissfully oblivious to the intricate and complex system that keeps us connected. From the user perspective, a dropped call is a dropped call but from a **MNO** perspective, understanding the root causes and offering proactive customer care has become business critical. Monitoring this kind of events as well as network latencies at the user level, with a software agent on the SIM or an application on the phone, provides valuable data to understand recurring problems and better respond to customer needs.

Anticipating the user experience with AI…

Now imagine going a step further and using collected information to anticipate the quality of the **user experience** wherever they go, before they even go there. This is the promise of **AI**. To understand how machine learning algorithms can anticipate network quality in neighboring zones, picture the cellular network as a honeycomb, where each coverage zone is represented by a hexagon. MNOs capture the signal strength of subscribers in each zone. But let's say a zone is sparsely populated and thus has little captured data; this is where algorithms come into play. They are intelligent enough to analyze data from adjacent zones to predict the **connectivity experience** in nearby areas.

… to make smarter investments

As they plan for extensions or new deployments, MNOs analyze the surface they want to cover and expected connection density. However, this universal method, based on theoretical calculations, doesn't always reflect the necessary amount of coverage actually required in real life. Currently, MNOs can monitor quality at the device level, but with **AI**, they will be able to capitalize on data from neighboring cells, predict connectivity needs and make more informed decisions helping them identify and prioritize zones with high user density, identify areas where service quality needs to be improved – guaranteeing enough bandwidth to provide a frictionless user experience, yet not too much to avoid unnecessary investment.

An innovation inspired by our clients

Quality of experience monitoring powered by **AI** is not fiction, it is an evolution of IDEMIA's pioneering **Smart Monitoring** solution. We observed that our existing Smart Monitoring clients need a more proactive approach. We developed these machine learning algorithms to enable them to further capitalize on data already collected in the field. This ability to proactively plan will only become more crucial as operators make significant investments in upgrading 3G equipment, extending 4G connectivity and preparing for the **deployment of 5G** over the next three years.

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*Source: GSMA
