

CASE STUDY How Zain Bahrain Improved Speed and Customer Experience with Crowdsourced Network Intelligence

Zain Bahrain recently became the first operator in the Middle East and North Africa to sunset its 3G network. The process of sunsetting 3G started with a partial shutdown in February 2022, and was completed 10 months later in December 2022. Zain saw significant improvement in median downlink and uplink throughput following its 3G sunset, leading to improved customer experience according to Ookla Consumer Sentiment Ratings.

LTE and 5G technologies are significantly more spectrum-efficient than 3G. By sunsetting 3G and freeing up spectrum for new technologies, operators can deliver faster, more resilient networks. Operators can benefit from lower operational costs, better energy efficiency, and improved customer experience — which is why Zain Bahrain set out to be the first operator in the Middle East and North Africa to sunset 3G. Zain used Ookla Cell Analytics™ to identify areas with dense 3G traffic, areas where consumers were still using older devices, and locations in need of improved 4G coverage.



"We take great pride in delivering an excellent customer experience, which is why Ookla's crowdsourced intelligence was an important part of our 3G sunset strategy. It enabled us to see exactly where customers were still using 3G and then improve 4G or 5G coverage in those areas, ultimately providing a seamless transition and improved customer experience."

 Amar Buali, Manager, Network Access, IP & Cyber Security & Building Services, Zain Bahrain

**Benefits** 



Identified where customers were reliant on 3G networks to ensure a successful user transition to 4G and 5G networks



Validated improved network performance, coverage, and consumer sentiment as a result of the 3G sunset



Reduced operational costs and improved energy efficiency by reducing network complexity

# Situation

Zain's plan to sunset 3G would require careful planning and communication to ensure a seamless experience for users and businesses as they transitioned to 4G and 5G networks. Zain knew that while shutting down 3G, there was a risk of customers becoming dissatisfied if it impacted their quality of service. When sunsetting 3G in markets where many consumers don't have 4G- or 5G-capable devices, it's important to understand where these customers are located and how much of their time is spent on legacy technology. Before shutting down 3G, Zain needed to ensure that their 4G and 5G networks would be prepared to handle previous 3G traffic.

## Solution

Using crowdsourced network intelligence in Cell Analytics, Zain Bahrain was able to find out where customers were still relying on 3G — down to where subscribers have user equipment that can't connect to modern network technology. Looking at downlink throughput on 3G Devices in Bahrain during Q2 2022, we can see that there was a concentration of 3G users in the capital city of Manama.

#### Zain BH DIPLOMATIC UMTS Downlink AREA Throughput > 100.0 Mbps The Diplomat 50.0..100.0 Mbps 10.0.50.0 Mbps Bahrain Nation < 10.0 Mbps BAHRAIN FINANCIAL The Blvd HARBOR Bayti Rd 615 Gulf Gate Hotel Rd 513 APHOORA Rd 1858 Rd 123 70 Rd 711 Centre Concord national Hotel AL QUDAIBIYA Rd 921 Imperial Suites Al Rag Ave 22

Cell Analytics™| Q2 2022

Downlink Throughput on 3G Devices in Manama, Bahrain



Looking at LTE RSRP data during the same time period, Zain was able to determine if customers were using 3G due to weaker 4G or 5G network coverage. They were also able to understand where improved coverage would be needed to enhance customer experience. The yellow and orange dots below indicate areas where 4G signal strength needed improvement at the time.



### 4G LTE RSRP (Signal Strength) in Manama, Bahrain

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Voice over LTE (VoLTE) was a key aspect of Zain's strategy to ensure a successful 3G sunset. In the absence of VoLTE, 4G- and 5G- capable devices will fall back to 3G for voice services. This might result in poor customer experience due to the inability of 2G to handle voice and data simultaneously. To address this, Zain focused on increasing awareness of VoLTE and ensuring that users have it enabled on their devices. Zain was also able to offer customers low-cost LTE device upgrades to help with the eventual transition from 3G to 4G and 5G networks.

Sunsetting 3G can impact more than consumer devices. In Bahrain, many machine-to-machine (M2M) devices like smart meters previously utilized 3G network technology. To ensure connectivity for devices that weren't 4G- or 5G-capable, Zain continuously monitored and maintained availability of its 2G network.



After the sunset was complete, Zain used Cell Analytics to monitor customer adoption of 4G and 5G and ensure connectivity for M2M devices. Looking at downlink throughput on 3G devices one year later during Q2 2023, there were no users connected to 3G post-sunset. Downlink throughput for 4G and 5G shows where these customers are now connecting to new network technologies — indicating that 4G and 5G adoption is going well.



Downlink Throughput on 4G and 5G Devices in Manama, Bahrain



## Outcome

As a result of the 3G sunset, Zain Bahrain was able to optimize CAPEX and OPEX, reduce its carbon footprint, improve its network performance and coverage, and provide a better end-to-end customer experience.

In terms of network performance, Zain saw over 60% improvement in median downlink throughput and over 30% improvement in median uplink throughput after the sunset was complete.



These faster speeds played a crucial role in lifting Bahrain's <u>Speedtest Global Index</u>™ ranking into the top 10 countries worldwide for March and April of 2023.

Zain's improved performance and coverage led to a higher Ookla Consumer Sentiment Rating which is based on five-star ratings provided by customers at the end-of-test survey in Speedtest<sup>®</sup>. As you can see below, Zain's overall customer satisfaction rating improved steadily over 2023.



With the help of Ookla Cell Analytics, Zain was able to successfully sunset 3G in Bahrain — providing a more advanced network and a better customer experience, as well as improved performance for the entire kingdom of Bahrain.

## About Zain Bahrain

Zain Bahrain is a telecommunications industry innovator focused on enhancing customer experience. Zain Bahrain is part of Zain Group, a leading telecommunications operator across the Middle East and Africa, which provides mobile voice and data services to over 53 million active customers as of March 31, 2023. With a commercial presence in eight countries, Zain operates in Kuwait, Bahrain, Iraq, Jordan, Saudi Arabia, Sudan, and South Sudan. In Morocco, Zain has a 15.5% stake in 'INWI', through a joint venture.

