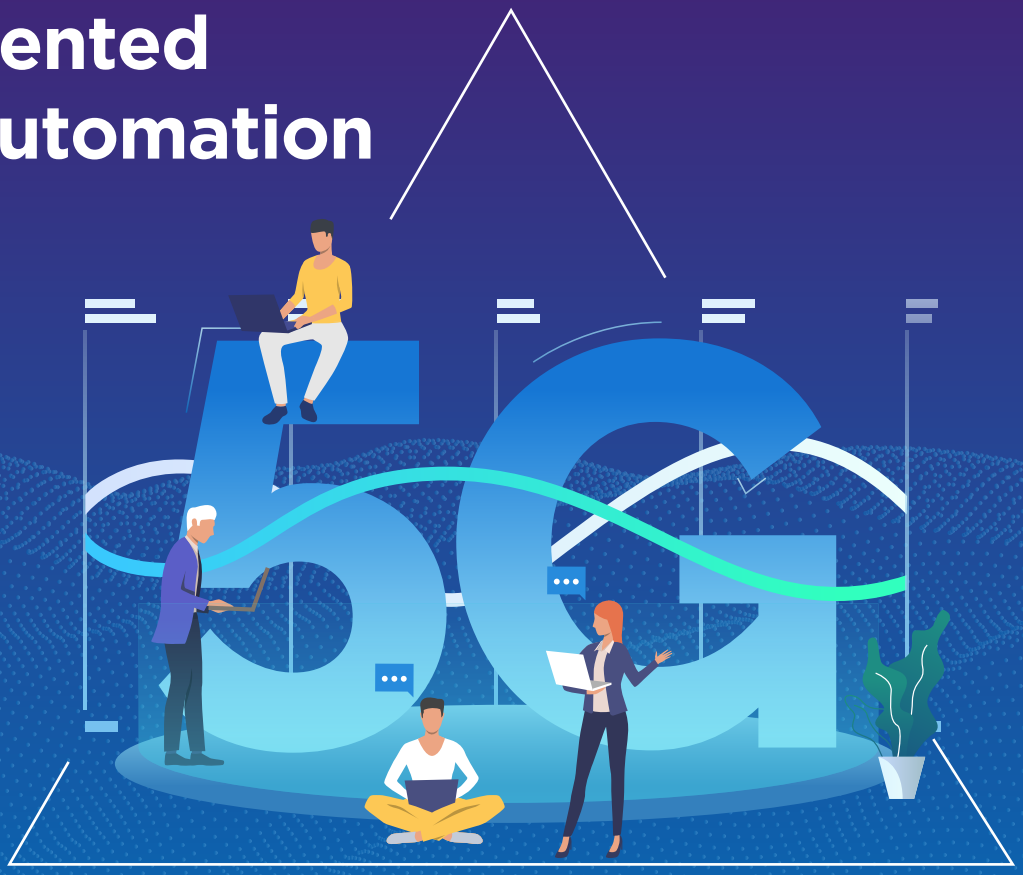
HCLSoftware

Energy Saving with HCL Augmented Network Automation



CASE STUDY

SUMMARY

A telecom services operator in the Americas Region wanted to reduce energy costs without impacting subscriber user experience. The operator wanted to incorporate predictive power optimization without the extra expense in engineering time. An automated solution that could accomplish cell capacity management without compromising the Quality of Experience (QoE) for users was a key priority. The service operator turned to the HCL Augmented Network Automation (ANA) Platform, a proven technology that was fast to implement and resulted in significant energy savings.

CHALLENGE

Amid rising energy costs, the telecom services operator wanted to reduce the operating expenditures (OPEX) of electricity and increase efficiency without impacting its subscribers. The operator had already implemented energy mitigation measures, but the results were insignificant.

According to McKinsey, “operators’ energy costs keep rising, but efficiency measures and organizational change can lower them by 15 to 20 percent in a year.” In addition, “Some 85 percent is wasted because of heat loss in power amplifiers, equipment kept idling when there is no data transmission, and inefficiency in systems such as rectifiers, cooling systems, and battery units.”

To achieve these kinds of results, the team knew that an automated solution was required to accomplish cell capacity management and maintain a high quality experience (QoE) for users.

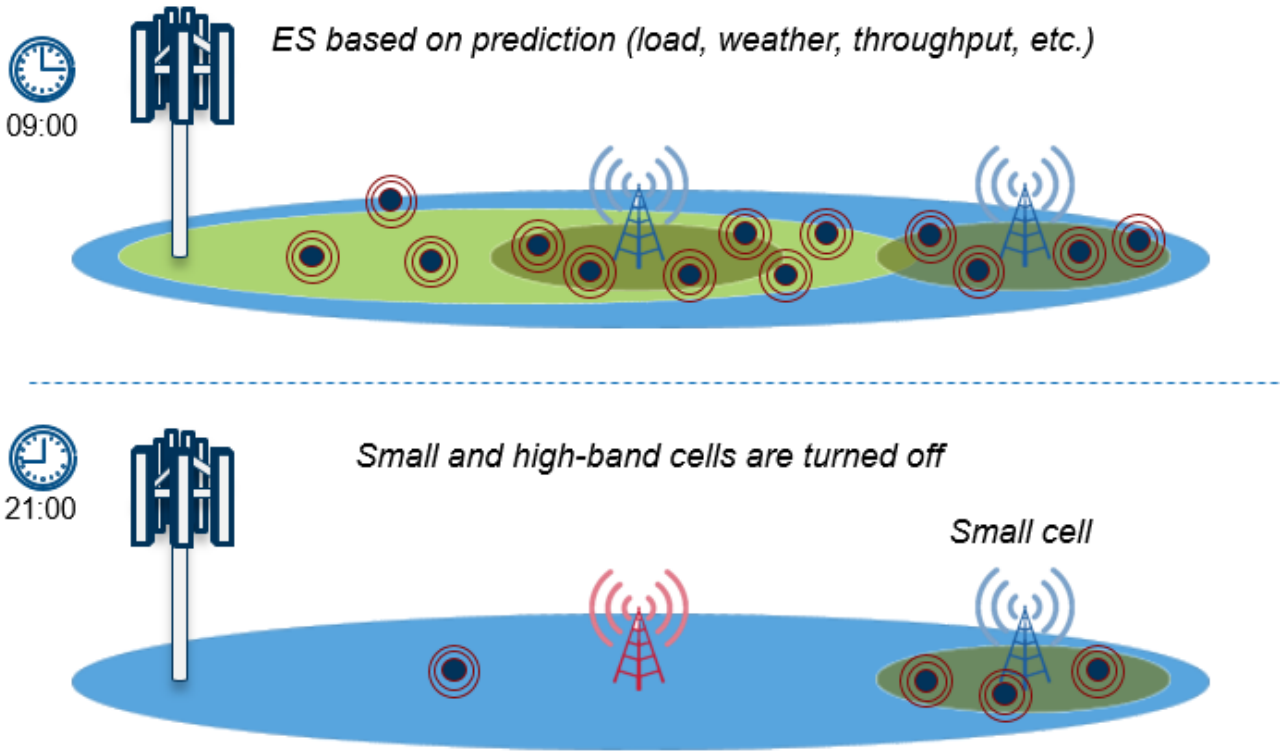
SOLUTION

The service provider implemented the HCL Augmented Network Automation (ANA) Platform. Built on the foundation of Cisco SON, ANA is a next-generation SON platform that enables telecommunications service providers to simplify network management complexity with a closed-loop network automation environment that supports multi-vendor, multi-technology deployments. The ANA Platform collects and processes vast amounts of data in near real-time from all network domains (radio to transport to the core) to automatically predict, configure, and optimize multi-domain networks with self-healing techniques.

The HCL ANA platform's energy-saving module utilizes a powerful algorithm that includes traffic pattern learning to forecast energy load in a specific area. Then it automatically triggers unused capacity layers of cells to stay in a lower-power consumption mode when there is low utilization. The cells are then turned back on when predicted traffic requires.

The traffic prediction for this customer was based on parameters that included historical load, number of users, weather, and service SLA. Furthermore, the ML engine could predict the QoE when a cell was turned off and adjust as needed.

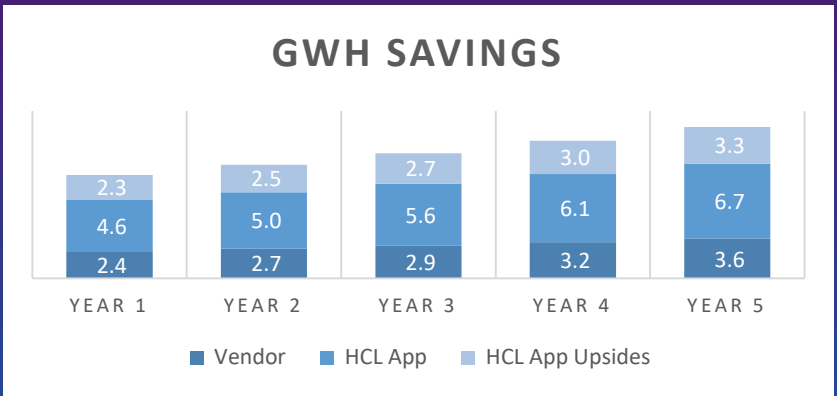
This solution was required to support multi-vendor use cases, which made the ANA platform methodology, which is vendor agnostic, an ideal solution.



This granularity was a significant improvement over the system available with the Network Vendor Equipment out of the box. The HCL ANA Platform reduced power across the network rather than at a cell level. This is because those systems have static settings requiring configuration at the cell level, making it impossible for operators to apply different settings on every cell. Therefore, they have to apply the same settings to every cell.

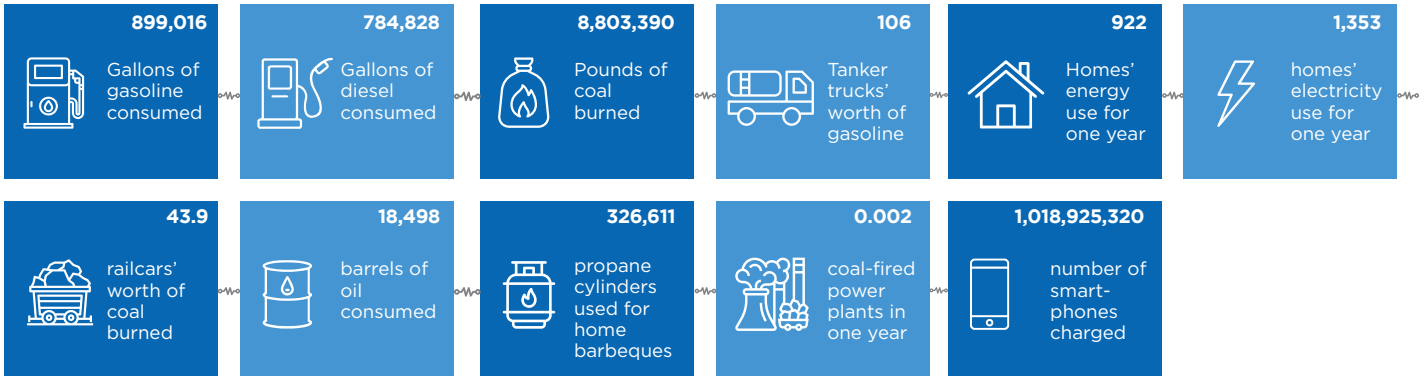
RESULT

With HCL ANA, traffic analysis is done per cell based on the algorithm and pattern learning. This allows automated adjustments per cell. The result is 3.5 times or 6 kilowatts per hour of energy savings, per cell, over the other system that applies power reduction across all cells at the same level. This translates into a forecasted energy savings cost reduction of $5.7 million USD based on a 10% annualized increase in network growth over a five year period.



The service operator experienced an average of 11.3 GWh energy reduction per year and saw an ROI in this energy imitative within four months.

CO_2 emissions from



An 11.3 GWh average reduction per year equals significant reductions in Co2 emissions, illustrated by the numbers above of other energy consumers.

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