Huawei Converged Network Solution Assists Saudi Arabia Build a Smart City

Challenges

- As a pilot Smart City in Saudi Arabia, Yanbu must digitize urban management services. During network deployment, Yanbu's challenges include diverse services, complex interfaces, and long distances.

Solution

- Build a converged government network consolidating the IT operations of multiple government departments and improving governmental office efficiency.
- Create a digital power network for buildings to help residents develop power saving habits and reduce electric power consumption.
- Produce a citywide IoT network to improve resident lifestyles.

Customer Benefits

- Smart City network construction greatly improves the city's public service level, expands external investment growth rate to 16 percent, and increases resident lifestyle satisfaction to 90 percent.

Yanbu, pilot city of Saudi Arabia's "Vision 2030" initiative, is mandated to drive industry diversification. A port city close to the Red Sea, Yanbu's transportation services occupy a high volume of its economy. Highly digitalized, the city is equipped with modern loading and unloading equipment.

Challenges

Using "Vision 2030" as an opportunity, Yanbu decided to address its challenges by constructing a smart, digital city, and establishing an objective of 59 percent improvement in urban broadband fiber coverage. Additionally, Yanbu encountered various urban management services, complex interfaces, and long distances during the city network construction. Integrated and unified service transmission was essential. Yanbu sought a solution provider that specializes in full network planning and the ability to provide scenario-tailored devices to help the city achieve its Smart City vision.

Solution

In 2017, the two-phase project focusing on smart urban management was launched. Huawei provided Yanbu with an overall network solution that achieved converged services, including:

- Government office service network: The network connects the formerly siloed government departments, enabling rapid information exchange between departments. Additionally, the network enables major assignments across multiple departments to be centrally planned and assigned, greatly improving the government office efficiency.
- Digital power network for buildings: Through the IoT sensor network distributed over office buildings, administrators can promptly collect power usage information for each area in a building, remotely control the supply of power, and uniformly switch on or off lighting devices and air conditioners. The digital power network helps save power.
- Digital network for street lamps: Through AR IoT gateway controls, street lamps are digitalized so city managers

can rapidly and remotely modify network lighting policies. Moreover, the street lamp network can also be used to release emergency notifications and provide information about government incidents, business, and weather updates to citizens. In addition, the network can also be leveraged to deploy phones for emergency calls and video surveillance cameras. All services are uniformly and hierarchically backhauled on the network, greatly improving the residential experience.

» IoT network for roads: With Huawei's help, Yanbu deployed a communications network along roads across the city. On each road node, sensors are used to collect vehicle information, such as license plate numbers, speed, and weight. With this network, the traffic management department can instantly detect vehicles that violate laws or regulations, improving transportation safety while increasing traffic efficiency.

Customer Benefits

After two phases of the Smart City construction, The Royal Commission for Yanbu (RCY) received significant benefits from the digital network. The comprehensive public lighting system cost was reduced by more than 30 percent, and road maintenance cost decreased by 20 percent. The rapid connection to the government network greatly improves the city's public service level. Since the construction of the Smart City in 2014, the foreign investment growth rate has reached up to 16 percent, much higher than the previous 2.5 percent. Moreover, resident satisfaction has increased to 90 percent.

Future Plan

City network development is only the basic component of the Smart City construction, and live network applications are not the end of the city's digitalization. Ayman, the CIO of RCY, said, "A large amount of data generated by each application system presents a new RCY, helping us improve city governance in a more targeted and efficient manner," CIO of RCY Ayman said. "I think it is just the beginning of Smart City. RCY will further collaborate with Huawei to provide citizens with better public services and make our city more attractive by leveraging new technologies."

Products

Campus switches: S5720, S5320
IoT gateways: AR550, AR502
WLAN: AP8130DN and AC6005
Management platform: Agile Controller and eSight