Bridging the Gulf with the **Latest ICT** Technologies

A study recalling Batelco's ability to deliver Information and Communication Technologies solutions for The Four Seasons.

Batelco provided the King Fahd Causeway Authority (KFCA) with a state-of-the-art unified network infrastructure to enhance communication, mobility and collaboration across the entire scope of the 25-kilometre Saudi-Bahrain road causeway operations. The new infrastructure is designed to be highly available and have the capability to support all integrated communication and telephony services.

Client Overview

KFCA is responsible for the managerial, financial and technical supervision of all operations regarding the King Fahd Causeway. This covers maintenance, operation and inspection; as well as coordination with appropriate Government agencies such as immigration, customs, police and coastguard. The 25-kilometre causeway links the Kingdoms of Bahrain and Saudi Arabia by road across the Bahrain Gulf, and acts as Bahrain's gateway to the wider Gulf Cooperation Council (GCC) countries. Regarded as a great feat of modern engineering, the causeway ranks among the 20 longest bridges in the world and one of the longest bridges over water. Additionally, the causeway is the longest in the Arab world.

Officially opened in 1986, the causeway took four and a half years to complete at a total cost of US$ 1.2 billion, and comprises five road bridges and seven embankments. The fourth embankment – known as Middle Island and covering an area of over 600,000 square metres – houses the KFCA offices, a border station, government agencies, mosques, two 213-foot towers with viewing restaurants, and other commercial and retail buildings. The causeway handles an average of 45,000 vehicles per day, with annual usage totalling around eight million vehicles and 18 million passengers.

KFCA Profile

- Responsible for operating the King Fahd Causeway
- Managerial, financial and technical supervision
- Maintenance and technical inspection
- Coordination with government agencies

The King Fahad Causeway

- One of the longest bridges of its kind in the world
- 25 kilometres in length, comprising five bridges and seven embankments
- Total cost US$ 1.2 billion
- Construction took 4½ years
- Handles around 8 million vehicles and 18 million passengers annually

KFCA's Business Needs

Requirements

Due to the increasing vehicle and passenger usage of the causeway in recent years, KFCA recognised the need to replace its disparate communication systems based on legacy technologies with a new state-of-the-art integrated infrastructure. Moreover, to facilitate KFCA's proposed expansion plans, this new infrastructure was needed to improve efficiency and availability, and reduce communications costs.

Unique challenges

The sheer length of the causeway at 25 kilometres posed some unique challenges for the KFCA in managing its communications requirements; some technologies are limited by distance reach and hence there was a need to overcome this barrier. In addition, the causeway covers two GCC countries with different government agencies, regulations and legal jurisdictions, and two separate telecoms providers. As well as carrying out its administrative functions, the Authority also needs to cater for the mobile communications needs of its customers when crossing the causeway.

Batelco's Strategic Solution

Batelco's strategic turnkey solution to meet the needs of the KFCA was to replace the legacy communications system with integrated network infrastructure and voice solutions. This was designed to facilitate communication, mobility and collaboration across the scope of the causeway's operations. The infrastructure was designed to be highly available, and have the capability and flexibility to support all unified communication and telephony services over both wired internet protocol (IP), non-IP, Wi-Fi and legacy networks; together with the required scalability to meet future expansion plans.

The integrated IT infrastructure supplied by Batelco comprised unified communications, video conferencing, active wired networking, data centre (DC) security and switching, wireless networking and passive cabling. Voice solutions included telephony, unified messaging (voice, text and fax) and voice mail. The turnkey solution was designed to enhance the KFCA's increasing demand for rich media collaboration (including voice, video, presentations and video conferencing) coupled with on-going enhancements undertaken by the Authority to improve efficiency and availability, and minimise communications costs.

Analogue elements were incorporated in the solution to enable connectivity over the entire length of the causeway, since it would have been difficult and costly to use digital technology. Analogue connectivity also eliminated the use of expensive end-point equipment which has higher running and maintenance costs.

Batelco's Holistic Solution

- Core network infrastructure
- Distribution network (both wired and wireless)
- Physical network infrastructure
- Data centre security.
- Telephony
- Unified messaging

Systems and Services

- IP data network infrastructure
- IP telephony solution
- Full indoor/outdoor Wi-Fi network
- Hotel orientated cloud-based services
- High speed dedicated internet service with high availability access
- Fixed voice services
- Mobile voice and data services
- Indoor GSM antennae system

Business Results

Batelco successfully met the client's requirements for the design, supply, and installation of ICT infrastructure and telecom services that would facilitate essential communication, mobility, and collaboration to support full hotel operations.

The deployed infrastructure was built on a highly available framework that provided the necessary capability and flexibility to support all hotel IP infrastructure systems and voice services over both wired IP and Wi-Fi networks; together with the capability of supporting both current and future application services.

Customer Benefits

The Four Seasons Hotel prides itself on providing an extraordinary service to its discerning clientele. This includes offering a natural extension of a guest's home and work environments, with constant connectivity and no disruption while travelling. Batelco's solution allowed the hotel to guarantee this optimal service to its guests, while consolidating all its business communication and control costs in an effective manner, so that it could successfully compete in the highly-competitive hospitality market.

In addition, with the installed systems being discreetly placed – both internally and externally – to provide an appealing aesthetic and visual appearance, the hotel's unique design was not compromised. The indoor Wi-Fi and GSM access points are concealed from full view in all public areas and guest rooms; while the outdoor Wi-Fi system blends in with its surroundings while meeting hotel performance criteria.

Customer Testimonial

Batelco successfully met our critical requirements for a highly secure, available and flexible ICT infrastructure and telecoms services to support all hotel operations, without compromising the unique design features of this new five-star property.

The solution has enabled us to meet our guests' requirements for constant and secure connectivity when away from home or the office; and also to consolidate all our business communications and control costs in an effective manner.