

Network Brings Life-Changing Medical Care to Africa

Mercy Ships Uses Cisco Network and WiFi to Connect Medical Volunteers around the World with On-board Surgeons

EXECUTIVE SUMMARY



PROJECT

Mercy Ships

FOCUS AREA

Healthcare services and sustainable development projects

CHALLENGES

- Managing complex logistical co-ordination and ship-to-shore communication on the *Africa Mercy*, the world's largest charity hospital ship
- Providing on-board surgical staff with instant “anytime, anywhere” access to remote consultants and medical knowledge services

SOLUTION

- Cisco WiFi and networking technology forms a communications backbone for all aspects of work on the *Africa Mercy*

RESULTS

- Telemedicine capabilities enable staff on board to obtain expert advice and diagnoses more quickly than before
- More efficient delivery of high-quality healthcare services increases the charity's effectiveness and its ability to fund new projects
- Improved management of logistics helps to simplify the sourcing and delivery of donations and supplies

Global charity, Mercy Ships, brings together dedicated teams of volunteers who provide essential medical and humanitarian services to some of the world's poorest communities. Africa Mercy, the charity's latest and biggest hospital ship, will require excellent communications to co-ordinate resources from around the world and deliver efficient and effective care to patients.

CHALLENGES

Mercy Ships is a global charity that provides first-class medical care and training, free of charge, to some of the world's poorest nations. It also carries out construction and agriculture projects aimed at achieving long-term, sustainable development for the communities that they benefit. Since its inception in 1978, Mercy Ships has affected millions of lives in over 70 developing countries.

As a key part of its healthcare provision, Mercy Ships operates three hospital ships on which volunteer medical experts from around the world perform life-changing operations to treat cleft lips and palates, cataracts and crossed eyes, maxillo-facial



and other tumors, orthopedic problems, women's reproductive illnesses, and more. Prior to treatment, many patients were living in excruciating pain and were ostracized by their families and communities.

The most recent vessel, the *Africa Mercy*, aims to relieve suffering for thousands of West Africans every year. Currently being converted from a rail ferry, it will become the world's largest charity hospital ship with six operating theaters, an 80-bed ward, and over 400 volunteer staff. The *Africa Mercy* will require excellent logistical co-ordination and ship-to-shore communication. As importantly, surgeons on board will need instant remote access to consultants and medical knowledge services, in order to serve their patients as quickly and effectively as possible.

SOLUTION

At the instigation of its partner, the [Charity Technology Trust](#), Cisco Systems® has provided the WiFi and networking technology that will form a vital communications backbone for all aspects of work on the *Africa Mercy*.

Most importantly, information and communications technology (ICT) will revolutionize the quality of healthcare provided on board. In particular, Cisco technology will improve the efficiency with which medical care is delivered to patients, enabling *Africa Mercy* to serve more people, more quickly.

Without ICT, for example, surgeons would have to send histological samples overseas, delaying the turn-around times for results by up to three weeks. Reliable and fast connectivity enables instant access to the best pathology experts and treatments in the world. The Cisco technology on board the *Africa Mercy* facilitates telepathology, the practice of pathology via remote telecommunications. This means that, while the patient is on board the Mercy ship in Africa, a volunteer pathologist located anywhere in the world will be able to view samples sent as still images via secure email links and make an immediate diagnosis.

“Without the ongoing support of donor companies like Cisco, Mercy Ships simply could not operate.”

—Judy Polkinhorn, Executive Director, Mercy Ships UK

The technology powered by the Cisco network will also enable live consultations to be performed on an emergency basis in response to unexpected findings during an operation. This will mean that appropriate treatment can be provided in a single operation, preventing further discomfort for the patient and helping ensure a lasting cure.

State-of-the-art technology is essential to the ongoing task of running the ship, which includes replenishing supplies of medical consumables and drugs, managing human resources requirements, and maintaining contact with stakeholders. Due to the complexities of working in developing nations, sourcing goods as donations from several different countries, and co-ordinating shipping by container, the *Africa Mercy*'s logistics and procurement teams must be able to communicate effectively at all times between ship and shore. The fact that records can be stored electronically rather than on paper means that more space is available on board for vital medical supplies.

Mercy Ships also relies on ICT for feeding information back to media channels worldwide to secure the continued support of its sponsors. The Cisco network will allow *Africa Mercy* to keep in contact with the charity's supporters throughout each voyage in order to raise awareness and attract donations.

RESULTS

Entire communities have benefited from Mercy Ships' provision of medical equipment and medicines, as well as its water sanitation projects and agriculture and construction training. Cisco's technology, and the healthcare services that it supports, will enable the *Africa Mercy* to serve more people in more communities, more efficiently than ever before. Ease of communication with sponsors and on-shore logistics teams will help to make the *Africa Mercy's* role sustainable, allowing it to continue to successfully fulfill its mission to improve the health and lives of some of the world's poorest people.

Delfine's Story

Delfine is one of millions of people whose lives have been transformed by the expert medical care of Mercy Ships' volunteers. Many like her will be helped by the *Africa Mercy*, powered by Cisco technology.

For more than eight years, a tumor grew slowly on the side of Delfine's face. By the time she turned 16, it had reached the size of an orange. The growth pushed out the skin surrounding her left eye, stretching it thin and disfiguring her face. Delfine could not remember exactly when the tumor began to grow, but she remembered that the pain was especially bad from the age of eight onward. This affected her not only physically but emotionally too. "I felt very unhappy," she says. "People mocked me. It made me cry. I stayed at home and never went anywhere. If I did go out, I had to cover my face."

The tumor was removed on board the Mercy Ship *Anastasis* in 2006. First, Chief Medical Officer, Dr. Parker, wanted to be sure of the nature of the tumor so he enlisted the help of British histopathologist, Dr. Ed Sheffield. With the use of Internet-based technology new to the *Anastasis*, Dr. Sheffield was able to view Delfine's biopsy material from his computer in England. This enabled a diagnosis to be made within just three days of the biopsy.

Delfine had schwannoma (neurilemoma), a benign but excessive growth of the schwan cells that form the protective coating around the nerves. With this information, medical officers on board the *Anastasis* were able to provide Delfine with the most appropriate care.



Had the tumor not been removed, it would have continued to grow, further distorting the girl's pretty face and prolonging her misery. Thanks to Mercy Ships and the first-class diagnoses permitted by the technology on board, Delfine received top-quality care.

Delfine's operation on board the Mercy Ship changed not only her physical appearance, but also her attitude towards herself. The young girl who came for treatment would not look people in the eye, obviously ashamed of her looks. Now her nervousness gives way to a smile: "I am very happy when I look at myself now. My life is going to change. I will not have to cover my face anymore."

THE FUTURE

When complete, the *Africa Mercy* will effectively double Mercy Ships' capacity in Africa, in terms of the number of operating theaters, the number of volunteers serving on board, and the charity's ability to take on land-based projects. Over the next 30 years Mercy Ships hopes to expand further by building on its current position, becoming even more successful at improving the lives of millions of underprivileged people in the world.

"Without the ongoing support of donor companies like Cisco, Mercy Ships simply could not operate," says Judy Polkinhorn, executive director, Mercy Ships UK.

MORE INFORMATION

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For more information about Mercy Ships, please go to: www.mercyships.org

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