Customer Success Story

Unified Communications Propelling Coordination of Medical Affairs

EXECUTIVE SUMMARY

CUSTOMER NAME
- Zhongshan Xiaolan People's Hospital

INDUSTRY
- Healthcare

BUSINESS SIZE
- 520 Employees

OVERVIEW
- The hospital became the first in the health care system of the country to fully adopt Cisco Unified Communications Solution. In a breakaway with the traditional PBX phone wiring, it established the communications system based on IP network, integrating data, voice and video applications.
- Taking advantage of the open XML programmable interface, hospital staff can access vital medical information with ease.
- IP-based Unified Communications System makes it possible to integrate data, voice and video in the wiring, improving the accuracy and practicability of the information investment and maximizing the use of the data lines.
- Cisco's Unified Communications System introduced cost-savings solutions and reduced overhead costs for the hospital.
- IP communications can also foster greater use of the sophisticated network resources of the hospital. The high performance local area network system comprising two Catalyst 6509 exchangers and a Catalyst 3550 PWR can meet the exchange demand of IP voice data while satisfying the data exchange of medical information systems.

Progressive Development of Zhongshan Xiaolan People's Hospital with Cisco Unified Communications

A Century-Old Hospital without Telephone Lines

Located in the northern part of Zhongshan city in Guangdong province, Zhongshan Xiaolan People's Hospital is a Class A, Level 2 hospital with a history spanning a hundred years. An important centre in the area for medical treatment and instruction, scientific research and preventive healthcare, the Hospital oversees the medical services for the 300,000 local permanent residents and 1,000,000 residents in the region. With annual outpatients of about 870,000 people and in-patients of 18,000 people, the hospital is considered a large one.

When rapid economic development in the Xiaolan area contributed to increased calls for improved public sanitation conditions, the hospital of 520 employees and 500 beds invested RMB 400 million in 2003 to construct a new hospital building. The initial phase of construction was an area of 90,000 m^2 with 1,000 beds, fulfilling the standards of a Class A, Level 3 hospital.

During the construction period of the new hospital, Qu Guoxiong, president of Xiaolan People's Hospital and He Shuming, the vice president in charge of the information construction, instructed the information centre of the hospital to source for an advanced network and communications solution in line with the hospital's application development environment. They envisioned the transformation of Xiaolan People's Hospital as a digital medical institution in the country with a dynamic networking and communications sector.

Xiaolan People's Hospital ultimately decided to deploy Cisco Unified Communications Solution in the new hospital. The implementation of nearly 1,000 IP phones made Xiaolan People's Hospital the first medical institution to fully utilize Cisco Unified Communications Solution in the national medical system. Completely abandoning the traditional PBX phone wiring, the hospital concentrated on establishing novel communications systems and developing other digital applications based on IP networking. Teng Yifan, director in charge of the information plan of the hospital and its operations, proclaimed the newly-founded Xiaolan People's Hospital as "the first hospital in the country without phone lines".

The unified communications network employed by Zhongshan Xiaolan People's Hospital has enabled the integration of data, voice and video applications, providing patients easy access to highly efficient medical services. This also ensures a network platform which meets not only present application demand but also future development demands in the provision of innovative solutions at management level.

Real-time Cooperation Improving Medical Service Quality

Large-scale network applications have optimized the efficiency of medical staff and improved the doctor-visiting modes of patients. Doctors and nurses who used to memorize the telephone numbers of department offices now have an individual contact number in the new office building. They can set any phone in the hospital to their own extension numbers while doing their rounds and in emergency situations, look up the contact number of hospital. Specialists who travel extensively can discuss complex surgeries with the internal staff of the hospital by using the soft phone system equipped in computers without worrying about communication expenses.

The soft phone system provided by the hospital can be combined with VPN to realize long distance communications or video conferencing in long-distance medical consultations for the patients of Xiaolan People's Hospital. In the past, costly communications systems prevented long-distance consultation with external experts; presently, experts in every corner of the country can share video materials via network systems, expediting treatment for patients. Not only has the new system reduced communications costs for Xiaolan People's Hospital, its portability also allows for optimization of internal and external medical expertise, the cornerstone of effective medical services.

Coupled with Cisco's advanced wireless network, the PDA bedside round system with IP phone functions allows the medical staff of Xiaolan People's Hospital to inspect all sickbeds, check important information on patients and their medicinal records at any time, improving the overall quality of nursing services of the hospital. Based on the leading Cisco Unified Communications Systems, the hospital can also develop many novel medical services in the future. The implementation of call centre services based on the IP phone system enables experts to answer the questions of patients at any given time, greatly facilitating the CRM construction of the hospital, and in turn, improving customer service. Unified Communications Systems can also make possible innovative applications such as movable register, diagnosis result report, bedside video call, monitoring, doctor's attendance, visit records and house management of patient wards. Unified Communications Systems has brought about a modern communication experiences for more than 500 medical staff of Xiaolan People's Hospital and introduced novel facets to the management of the hospital.

As the IP phone system adopts open-type XML programmable interface, the hospital, through XML programming of the IP phone system, can express their confidence in using these phones to realize functions previously exclusive to PDAs or PCs. Touch screen interfaces of IP phones places information at the fingertips of medical staff. Technical personnel can even control some devices and complete the monitoring of patients with one IP phone. Medical staff can enquire about the vital signs of patients, drugs administration and other data on the IP phone. All these powerful functions can be expanded with the relevant applications, which will assist in categorizing the needs of the hospital.

In the past, information that the doctors and nurses of Xiaolan People's Hospital can obtain is limited to 2 meters to the front and back of the office desk. The flexibility of the Unified Communications System allows medical staff to complete their work regardless of location and get timely feedback and accurate information, a feature found lacking in the traditional PBX Communications System.

Due to high quality planning and operation, the future digital construction blueprint of Xiaolan People's Hospital envisions the evolution of a wireless network, IP 120 systems, an RFID System and a patient bedside information collection system, which will enable patients to get well-rounded and highly efficient medical services. For example, coordinating with the most advanced PDA devices, medical staff can collect patients' real-time information, monitor the dispensing of drugs and injections; doctors can utilize the network resources during ward inspections to make diagnosis plans for the patients upfront, and nurses, with the aid of computers, can accompany the patients for a longer period. With long-distance access of VPN, paramedics can even obtain information on the patients in the patient-visiting process of 120 ambulances, making rescue preparations well before the ambulance returns to the hospital. Based on the RFID application of the Unified Communications System, it is possible to accurately record the device assets management, medicinal and patient information of the hospital to reduce erroneous drug-administration cases and improve medication inventory processes.

Considering the town's reputation as a historical site, the leaders of Xiaolan Township Government were quick to realize the advantages in the inevitable progression to erecting infrastructures for more efficient information flows. Eventually, a zero cost regional communications system could be set up, when all medical units of Xiaolan Town are wired for easy and accessible connectivity.

Most Economical Development Mode

The Unified Communications System had not been included in the construction plan for the new hospital. It was only proposed when the information centre of the hospital reached an impasse with the voice communication plans handed in by various manufacturers. The quotes for the number of voice points required by different companies were vastly different and ranged from 700 to 1500. This posed a conundrum for the hospital's authorities since it was virtually impossible to determine the precise allocation of voice points in each room. Conversely, the Unified Communications System based on IP technology could attain the high-grade cryptosystem of three networks, namely "data + voice + video" when wiring. Therefore, it was only necessary to consider the design for data points when designing a wiring system, further reducing the complexity of the system and enhancing the information investment. Also worth mentioning is the optimization of data lines, as one data point is able to support multiple applications simultaneously.

After detailed investigation and strict verification, the information centre of the hospital established that the Unified Communications System was much more economical than the traditional PBX systems, in terms of investment, maintenance and management. The minimum charges of wiring 1000 PBX lines in the newly-built Xiaolan People's Hospital will amount to approximately RMB 950,000, while the cost of PBX, including machine rooms, will total RMB 1,000,000. In the light of such findings, the construction of the Cisco Unified Communications System can introduce cost-savings amounting to several hundred thousands, even millions of Yuan. Moreover, the integration of data and voice networks would relieve Xiaolan People's Hospital of the need to hire special staff to repair telephone devices, reducing the staff for the hospital.

Without the staff burden of the traditional PBX system, authorities and participating technical personnel can view the construction of networks and Unified Communications System from an objective ground: "We are not discussing the pouring of new funds into the construction of the Unified Communications System but exploring the benefits of a more advanced communications field to replace the traditional voice system." IP communications can optimize the utilization of hospital resources. The newly-constructed Xiaolan People's Hospital now possesses a set of high performance local area network system with two core Catalyst 6509 exchangers and a Catalyst 3550 PWR; such network system designs can fully satisfy the exchange demand of IP voice data, while facilitating the data exchange of medical information systems. Deploying the Unified Communications System can not only bring about advancements in communications technology, but also can ensure the full utilization of our network devices.

Conclusion

In the decision-making processes of information construction, Qu Guoxiong, president of Zhongshan Xiaolan People's Hospital, and He Shuming, vice-president in charge of the information construction have set their sights on building the long-term prospects of Xiaolan People's Hospital. This will ensure that Xiaolan People's Hospital enters a phrase in improving the quality of medical services quality not only through the utilization of simple technological systems, but also through the maximum integration of resources on the platform. Plans are being laid to establish branches in Zhongshan City and integrate other medical treatment resources in the region.

As the founding development of all information systems, communications networks are similar to the nerve and circulatory systems of the human body. The selection of an efficient system to convey information is imperative, for is the precondition to realizing all advanced applied technologies. The technological departments of the hospital also maintained that their reason for selecting IP communications technology as the development base of the hospital was its high-grade cryptosystem of three networks as well as its economical efficiency. The technicality of a prepared interface for future wireless technical applications and flexible allocation features were great draws as well. Therefore, Zhongshan Xiaolan People's Hospital hopes to establish a solid grounding to improve the medical information systems of the hospital and the region, striving towards more efficient integration of medicine and technology.

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