Franciscus Gasthuis & Vlietland teaching hospital

Digital transformation in healthcare

eurofiber

Fast growing demand for healthcare services coupled with the need to achieve cost and operational efficiencies poses a significant challenge for the healthcare system. ICT plays a crucial role in combining these two aspects, enabling digital X-ray imaging, for example, and facilitating cooperation between hospitals by allowing electronic sharing of patient information. Reliable and flexible bandwidth is essential in this context. The Franciscus Gasthuis & Vlietland teaching hospital, which has a staff of 4,200 and almost 300 doctors, anticipated these developments by opting for Eurofiber's fiber-optic network.

The challenge

Modernising the entire ICT landscape

"As early as 2012, it was clear that moving forward meant embracing further digital cooperation with other hospitals," says Tim van Toledo, Project and Programme Manager at Franciscus Gasthuis & Vlietland. "However, our connections lacked the necessary capacity to make this possible.

It was also clear that the lack of sufficient network bandwidth was having a ripple effect on the rest of our ICT landscape. While connections are key, digital cooperation also involves a parallel need for more storage capacity, for example. This is due to the data-intensive nature of sharing images and reports with other healthcare institutions.

The same also applies to the entire WAN landscape: are the routers and switches capable of processing it all? Added to this, we had to consider the availability of internet access for our patients and visitors, since it was clear that this would become an essential part of our services. We therefore decided that the original plans for expanding our external connections would not be enough, and that they needed to be reinforced by enhancing storage capacity and upgrading our network infrastructure. Here, too, foresight was the essence of good management, says Van Toledo. "While the ICT landscape, including the connections, was sufficient at that time, it is important always to avoid operating at 90-95% of your available capacity, since that constrains your ability to respond promptly to anything unexpected. With this in mind, we decided that each element of the ICT landscape needed to be scalable, to allow us to adapt and keep pace with the increasing demands of more intensive digitalisation."

The solution

Stepwise implementation

The ambitious task of modernising all aspects of ICT in the hospital was commenced in 2014. "A comprehensive review and upgrade of the ICT landscape all at once are not feasible. As a result, the entire project took several months to complete," explains Van Toledo. "That is especially true for a critical environment like a hospital. We have to be operational around the clock, 24/7.

That necessitated a step-by-step approach to implementing all the necessary upgrades - an enormous challenge for the project, the suppliers and, of course, the fifty members of the ICT administration team across our hospitals."

Franciscus Gasthuis & Vlietland issued a Request for Proposal to various potential vendors for the configuration and implementation of connections in 2015. It was crucial for the respective candidates to assure secure and reliable connections. Van Toledo: "We eventually selected Eurofiber, based on a combination of factors. Alongside cost, security was a key consideration. As a healthcare institution, we have to be certain there'll be no breach of patient data security, for example. We also had a strong preference for a single point of contact for all our connections. In the past, we procured multiple connections from various providers, each with its own service desk and individual Service Level Agreements. That was something we wanted to change. Eurofiber said they would use their own fiber-optic network and have a single service desk for all the connections. That was precisely what we were looking for. Added to that, Eurofiber could deliver within our available budget. Finally, Eurofiber demonstrated a high degree of operational flexibility and scalability in the network. The proof of this was in the fact that we could procure the total length of optical fiber we needed as a single package. Ultimately, the impressive scalability and flexibility were the deciding factors for our choice."

''The scalability of the fiber optic network and the great flexibility of Eurofiber made the difference.''

Tim van Toledo
Project and program manager Franciscus Gasthuis & Vlietland

Security and quality

Eurofiber delivered a fully configured fiber-optic ring that employs DWDM technology with 40 Gb/s bandwidth between the two hospitals (Franciscus Gasthuis in Rotterdam and Vlietland in Schiedam) and Dataplace's datacenter in Rotterdam. The datacenter of Dataplace, a sister company of Eurofiber, serves as an interface with other parties. All the locations are connected in a fully redundant configuration with physically separated routes in a ring, ensuring a continuously operational infrastructure for the hospital 24/7. Eurofiber was also asked to provide multiple internet services configured to ensure full redundancy for the Patient Care Portal, the Cloud services and WiFi at the hospital. Given its extensive use of Cloud services and heavy reliance on Electronic Patient File (EPD) systems, the hospital opted for physical redundancy across all its sites as well as a ring structure between all locations. Dark fiber facilitates connectivity to the external locations.

Franciscus Gasthuis & Vlietland decided to "light" the dark fiber themselves. By keeping the new dark fiber connections between locations as short as possible, taking into account low latency on the lines, the hospital was able to utilise simple network equipment to enable data transmission. The low latency was also important for the various applications, including Electronic Patient Files (EPD). The dark fibers are passive and are laid entirely underground and spliced together (end-to-end) between the locations, thereby providing an additional security component. Van Toledo: "Everything was completed in just two quarters, with delivery being finalised in January 2016. That is, quite simply, an outstanding achievement."

Van Toledo says that Eurofiber's flexibility shone through in the eventual roll-out, adding value at every stage. "To give an example: Eurofiber gradually rolled out the connections for each location instead of in a single, combined delivery at the end of the process. This had the great advantage of enabling us to incorporate phased delivery smoothly into our overall project planning. Eurofiber's flexibility was tremendously helpful to us."

The benefits

Scalable and future-proof

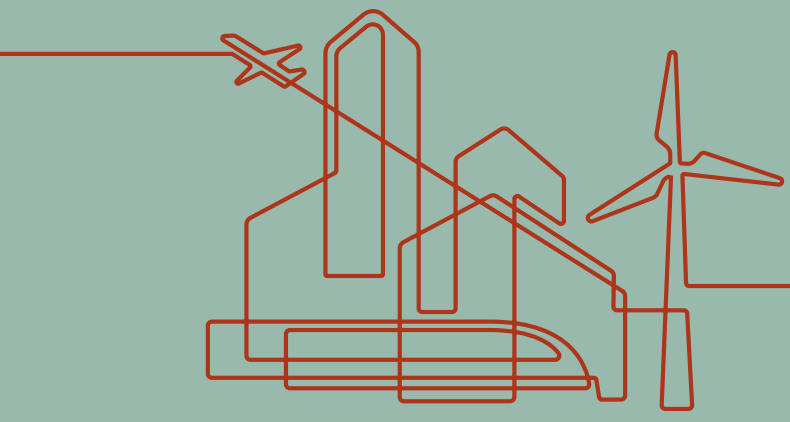
Ready for the future: four words that concisely summarise the benefits of Eurofiber's fiber-optic network for Franciscus Gasthuis & Vlietland. "While our current bandwidth of 40 Gb/s is more than sufficient for our needs at the moment, if our data volumes increase, as we expect them to, we can scale up to higher bandwidths effortlessly. That scalability is key to ensuring we are ready for the future. "Of equal importance is the fact that Eurofiber's underground fiber-optic network is secure. Added to that, the redundancy built into the network provides a guarantee of reliability and continuity." Eurofiber's state-of-the-art, high-speed infrastructure also facilitates the introduction of new applications, says Van Toledo. At the moment, Franciscus Gasthuis & Vlietland utilizes a private Cloud infrastructure with a dedicated datacenter. Should it be decided at some point in the future to introduce a hybrid Cloud environment then there will be no constraints in terms of network infrastructure. "Various companies specialising in medical solutions, such as MRI scans, have developed in-house Cloud solutions, which in turn leads to increased data traffic. This fiber-optic network ensures we're well prepared for this."

The case
Franciscus Gasthuis & Vlietland teaching hospital

- High-speed and reliable fiber-optic network
- Guaranteed continuity thanks to network architecture configured for redundancy
- Designed for the future with exceptional scalability
- Solid foundation for anticipated explosion in data traffic due to large-scale digitalisation

Curious to hear more about what we could achieve for your organization?

Eurofiber has been a fastgrowing international provider of industryleading digital infrastructure since 2000. Relying on our own fiber optic network and data centers, we provide smart, futureproof solutions for companies, government bodies and nonprofit organizations. Customers have complete freedom to choose the services, applications and providers they need, allowing them to tap into the full potential of digital innovation. In addition to our extensive fiberoptic network in the Netherlands and Belgium, along with our data centers in the Netherlands, we also offer solutions for interconnectivity between nearly all highquality carrierneutral data centers in the Benelux region. Eurofiber thus lays the foundation for the digital society. Consequently, the Dutch government has granted Eurofiber the status of 'vital infrastructure'.



Eurofiber. Lifeline for the digital society

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