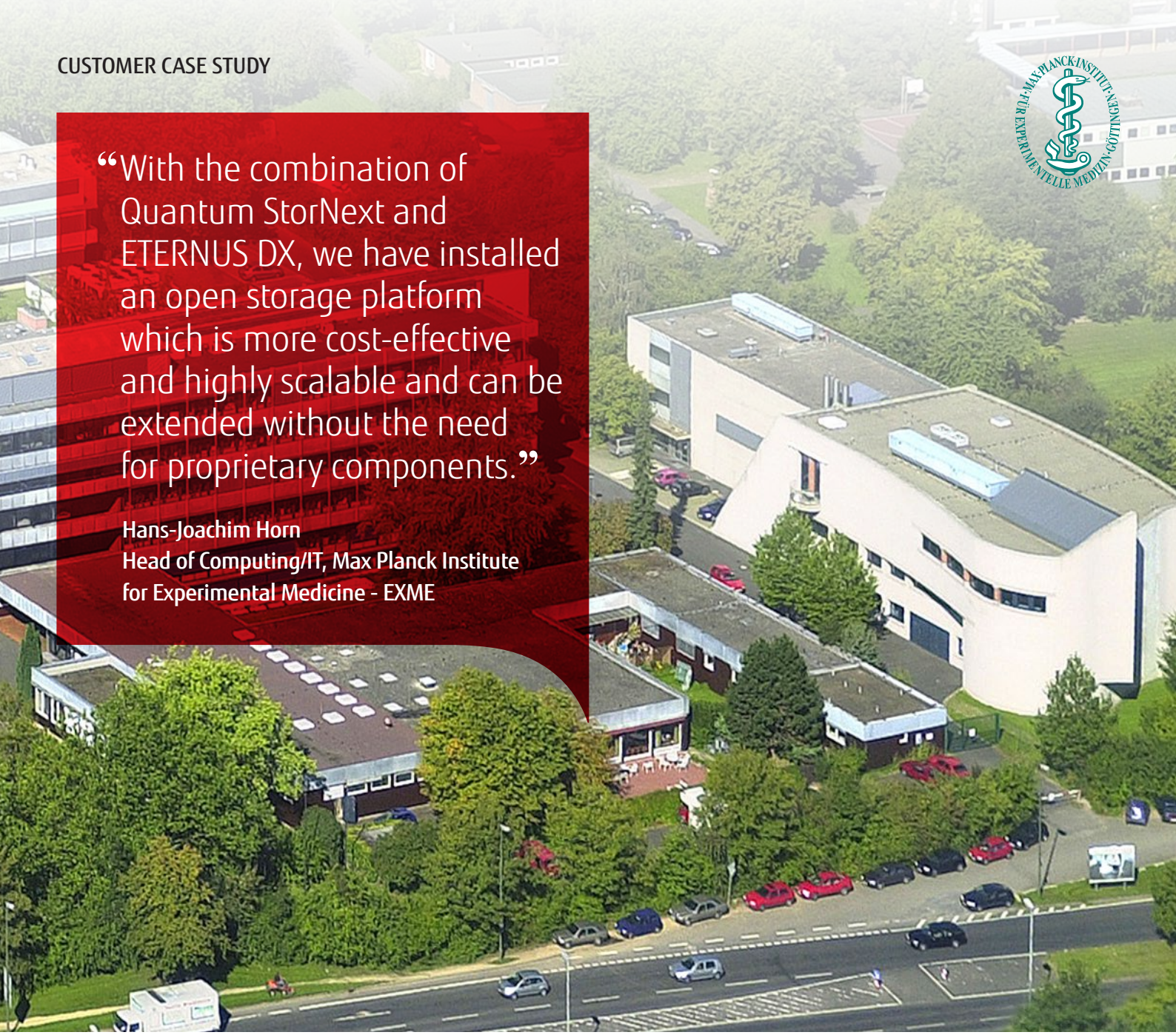
CUSTOMER CASE STUDY



> "With the combination of Quantum StorNext and ETERNUS DX, we have installed an open storage platform which is more cost-effective and highly scalable and can be extended without the need for proprietary components."

Hans-Joachim Horn
Head of Computing/IT, Max Planck Institute for Experimental Medicine - EXME

EXME needed a dynamically evolving data storage solution. Four FUJITSU Storage ETERNUS DX200 systems and a Quantum StorNext File System were installed.

At a glance

Country: Germany
Industry: Research
Founded: 1948, MPI f. Exp. Medicine since 1965
Employees: 290
Website: www.em.mpg.de

Challenge

The Max Planck Institute for Experimental Medicine in Göttingen required a storage system in which members of staff can store all their project data, as well as their day-to-day working data (home directories).

Solution

Four FUJITSU Storage ETERNUS DX200 systems were linked to online storage via a Quantum StorNext File System. Data from ongoing research projects is stored here. Once projects are completed, the data is transferred to the data center via a data line, where it is archived and managed via the StorNext File System.

Benefit

- The storage system is based on a classic SAN storage infrastructure and is therefore significantly more cost-effective than proprietary scale-out systems
- It can be extended flexibly – without high maintenance and licensing costs
- The intelligent Quantum StorNext platform manages data transparently over its whole lifecycle

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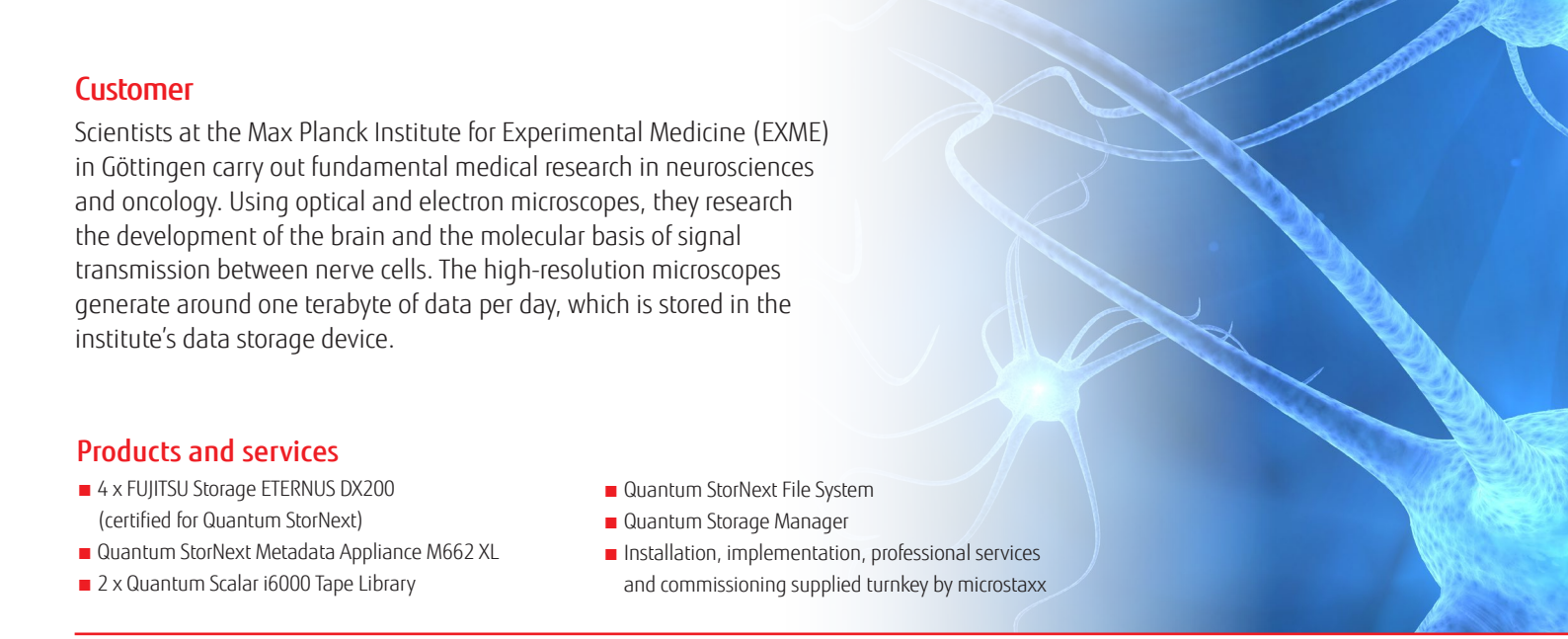
Customer

Scientists at the Max Planck Institute for Experimental Medicine (EXME) in Göttingen carry out fundamental medical research in neurosciences and oncology. Using optical and electron microscopes, they research the development of the brain and the molecular basis of signal transmission between nerve cells. The high-resolution microscopes generate around one terabyte of data per day, which is stored in the institute's data storage device.



Products and services

- 4 x FUJITSU Storage ETERNUS DX200 (certified for Quantum StorNext)
- Quantum StorNext Metadata Appliance M662 XL
- 2 x Quantum Scalar i6000 Tape Library
- Quantum StorNext File System
- Quantum Storage Manager
- Installation, implementation, professional services and commissioning supplied turnkey by microstaxx

Challenge

In recent years, storage requirements have drastically increased at the Max Planck Institute for Experimental Medicine. Optical and electron microscopes generate larger volumes of data due to their ever-increasing resolution and the higher number of pixels associated with this. "Our newest microscopes now generate multi-dimensional images (stacks) with a mean resolution of (6 x 1024) x (8 x 1024) pixels in 12-bit depth," says Hans-Joachim Horn, Head of Computing/IT at the EXME Institute. "This means that very high data volumes quickly accumulate; at present, 50 GByte/stack is not unusual," says Horn. Volumes currently stand at approximately one terabyte of data per day. Data generated by the microscopes remains available in online data storage until the respective project is completed. It is then transferred to the tape archive and the online storage space is freed up again.

Until now, data was stored in highly scalable storage systems from various providers. "Although these manufacturers' storage solutions can be extended quickly and easily, the costs of maintenance and capacity licensing increase greatly with each additional data storage device, as they are closed, proprietary systems," Horn points out.

A further problem was that data archiving was only possible by mirroring in one of the manufacturer's other systems and was secured by copying data via file sharing in the network. "To reduce costs here, in future we will use the data center at the GWDG (Gesellschaft für wissenschaftliche Datenverarbeitung mbH Göttingen) for archiving, with direct connection to the StorNext system," says Horn.

Solution

A microstaxx storage concept, comprising Fujitsu ETERNUS DX storage systems combined with Quantum StorNext. microstaxx, one of the contractual partners for IT provision at the Max Planck Institute, connected four FUJITSU Storage EXTERNUS DX200 systems via a classic fiber optic cable SAN infrastructure to form an open platform, which currently provides storage capacity of around 1.5 petabytes. Data access is organized by a Quantum StorNext File System. Henning Dorsch, Solution Sales Manager at microstaxx, explains the solution: "This software layer can manage all data transparently over its whole lifecycle in various storage classes and guarantees a high-performing parallel connection to scientific systems, servers and clients."

The four ETERNUS DX200 storage systems are each equipped with 72 x 6 terabyte Nearline SAS disks and can each be extended to up to 264 hard disks.

"The attraction of the solution is its modular structure," says Horn. Storage requirements can be extended flexibly and it is even possible to integrate other manufacturers' systems. "Furthermore, in the future we can use the GWDG data center's backup and archiving systems via the Quantum StorNext File System," says Horn. The GWDG also works with Quantum StorNext software, which manages around seven petabytes of storage on various storage systems. Storage in the data center is connected to two Quantum Scalar i6000 tape robots. The StorNet Storage Manager there relocates the data to high-volume storage systems and to an archive in a rule-based manner. "As a concept, connecting both StorNext entities via the Göttinger Wissenschaftsnetz GÖNET guarantees long-term secure archiving and availability of data," adds Harry Wenger, Solution Sales Consultant at microstaxx.

Benefit

Installing the Fujitsu ETERNUS DX storage system has significantly reduced costs. "Per terabyte, the current costs amount to around only two thirds of those incurred with previously operated storage systems – while retaining the same functionality and user-friendliness," says Horn. Moreover, the high levels of flexibility and performance make the new storage system the convincing choice.

"The institute's IT staff can now make additional storage capacity available quickly and easily, by simply adding further hard disks to the individual ETERNUS base systems," explains Dorsch. It is relatively easy to create more parallel storage capacity than is currently supplied by the four storage controllers, should this be needed at some point. "We would simply need to add extra SAN storage systems," says Horn. These could even come from a different manufacturer. Praising the flexibility that has been achieved, Horn says, "The solution that has now been installed means that we actually have a non-proprietary system for the first time." The administrative workload may increase significantly with open systems such as these, because pending updates now have to be carried out at different points. There may also be a need for more maintenance in an open system. "I now have much more hardware, which means that there is a greater likelihood of a component breaking down at some point," concludes Horn. However, as the system also provides a significantly higher level of flexibility and redundancy, a deliberate decision was made to accept the extra effort.

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