DELL Technologies

HIGHER EDUCATION
ITALY

University of Pisa: sustainable results for academia

One of the oldest universities in Europe, the University of Pisa's investment in energy-efficient infrastructure has seen it reduce its data center footprint and build towards a sustainable future.

Business needs

The University of Pisa is a globally ranked institution with a rich history in research and innovation. It required powerful, high-performance infrastructure that could support AI (Artificial Intelligence), ML (Machine Learning) and HPC (High Performance Computing) workloads while driving sustainability efforts.

Business results

- **Improved virtual workloads** performance by 80%
- **Implemented efficient infrastructure** for environmentally conscious results
- **Unlocked** new operational and performance efficiencies
- **Infused** research and education with AI and ML capabilities
- **Reduced cooling costs** of chilling PowerEdge and PowerStore systems by up to 30%

Solutions at a glance

- Dell PowerEdge
- Dell PowerStore

> **"Sustainability is crucial. We keep investing to become carbon neutral and reduce our power consumption."**
>
> **Antonio Cisternino**
> CIO, University of Pisa

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Harnessing powerful technology for a safer, greener future.

Entering a green era of education

Founded in 1343, the University of Pisa is a prestigious public institution with alumni ranging from famed mathematician Fibonacci to Galileo and multiple Nobel Prize winners.

Today, the University serves approximately 50,000 students with 3,000 faculty staff. This is no easy task. Providing rapid data access, remote learning and cutting-edge research capabilities on this scale created a large data center footprint.

Global energy instability is a challenge across all sectors, and higher education institutions are evolving by refreshing legacy infrastructure and consolidating data center footprints to meet sustainability goals.

To uphold its reputation for innovation, the University required IT infrastructure that could support AI, ML and HPC workloads — while minimizing cost, data center footprints and energy consumption.

Transforming learning with intelligent technology

As a leader in academic excellence, it was critical that the University of Pisa was a front runner in adopting the latest learning practices and lab and research capabilities.

With global energy prices increasing and sustainability a concern, an energy-efficient infrastructure is a strategic priority for reducing overall expenditure – especially as the University invests both student and taxpayer money in IT.

Large-scale scientific research and simulation requires powerful AI and ML technology. The University needed infrastructure that could reduce its data center footprint, energy consumption and CO2 emissions, all without compromising on performance for these new power-hungry workloads.

To set a benchmark in sustainable data center design, the University required storage and servers with competitive PUE (Power Used Effectiveness), compact form factors and intelligent thermal and cooling technologies.

Dell Technologies stood out as the partner that could deliver performance, innovation and a commitment to sustainable practices.

A partnership for high-grade, sustainable outcomes

Dell PowerStore is a high-performance, scalable storage platform built on powerful Intel® Xeon® processors. Up to 60% more energy efficient than previous designs, the latest PowerStore combines all-NVMe performance with guaranteed 4:1 data reduction to help the University achieve more results from a smaller infrastructure footprint.

The flexible platform also simplifies IT operations with intelligent automation that auto-tunes performance, resiliency, and efficiency without manual intervention.

Extensive ecosystem integrations — including built-in support for VMware virtualized workloads — make PowerStore perfect for running key scientific simulations, right out of the box.

PowerStore's Anytime Upgrade program keeps the platform continuously modern, with all-inclusive software and easy non-disruptive controller upgrades that prolong the lifecycle of each PowerStore array, giving the University's IT staff confidence their workloads will always be running on the latest technology.

Anytime Upgrade provides a winning advantage for a sustainable future by building on the PowerStore's energy and operational efficiencies. With the University subject to high temperatures, its data center must be able to maintain performance in challenging conditions — and PowerStore and PowerEdge continue to thrive.

Dell PowerEdge's energy efficient design and advanced thermals enable it to perform at temperatures of up to 45C without throttling, while PowerEdge and PowerStore's cooling capabilities have reduced cooling costs by up to 30%.

> **"PowerStore was designed with a sustainability focus, which has allowed us to do more with less."**
>
> **Maurizio Davini**
> CTO, University of Pisa

> **We were looking for ease of integration, performance and flexibility. PowerStore gave us all three."**
>
> **Maurizio Davini**
> CTO, University of Pisa

On top of that, PowerEdge has 43 EPEAT registered products, a 3.0 ENERGY STAR® rating and is produced from up to 35% recycled plastic.

PowerEdge accelerates the University's innovation with AI, ML and HPC capabilities. Students and faculty can infuse these intelligent technologies into their research to win academic awards and solve multi-disciplinary challenges.

Building the future of eco-friendly education

The University's IT staff and faculty enjoy peace of mind knowing that Dell is committed to powerful, innovative technology that doesn't hurt the planet.

By partnering with Dell, the University of Pisa has unlocked new performance results and operational efficiencies while simultaneously leading the way for future infrastructure initiatives.

> **We love PowerEdge's non-functional aspects. The internal management of the fan, its small footprint and the fact you can run up to 45°C is crucial."**
>
> **Antonio Cisternino**
> CIO, University of Pisa

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