

University of Pisa leans on technology to drive innovation







Innovation extends beyond a university's research. Learn how integrating energy-efficient data infrastructure enabled one of Europe's oldest universities to continuously innovate.



Business needs

Since the days of Galileo, the University of Pisa has been synonymous with invention and innovation. To maintain this heritage, continue driving progress and provide faster access to information, remote learning and modern research tools, the University of Pisa needed a new, high-performance IT architecture.

Business results

-  **5x faster data processing** to meet faculty, staff and student needs
-  **80% improved performance** across a range of essential applications
-  **No manual security interventions** needed
-  **Zero downtime or data loss** across all essential services
-  **Facilitates** pioneering teaching and research
-  **Reduced IT staff intervention by 80%**, saving crucial skills for core business activities

Solutions at a glance

- [Dell PowerMax](#)
- [Dell PowerStore](#)
- [Dell PowerScale](#)
- [Dell PowerEdge](#)

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Maurizio Davini
CTO, University of Pisa



Preserving tradition and advancing future learning with Dell

Higher education has reached a turning point. Colleges and universities, our traditional centers of innovation, are under pressure to deliver new learning models and harness emerging technologies.

For almost 700 years, the University of Pisa has been at the forefront of innovation, invention and human development. It was here in the 16th Century, where Galileo, the founder of modern science, first demonstrated the experimental approach to scientific discovery.

Today, the University of Pisa is still one of the finest and most highly-regarded institutions in Europe. And its dedication to research and innovation is just as strong as it was back in Galileo's time.

"Over the past few years, we've completely redesigned our IT, innovating in every area from computing to storage to networking," said chief technology officer Maurizio Davini.

Students and faculty across the University's 20 departments needed more flexible, collaborative and cutting-edge IT infrastructure to drive efficiencies and support remote learning as well as other demanding workloads across the institution.

First degree infrastructure

The way students, staff and the University operated was rapidly changing. This resulted in data and computer demands significantly increasing.

Needing a new, high-performance IT architecture, the University of Pisa chose to power its new infrastructure with Dell PowerEdge servers.

PowerEdge servers accelerate digital transformations by giving universities the ability to scale when necessary. The University now has the flexibility to drive innovation using AI, machine learning and big data, without sacrificing performance.

Smarter storage

The University decided to deploy AI on Dell PowerScale and utilized Dell PowerStore for its virtualized infrastructure, leading to an 80% increase in performance.

"The end-to-end NVMe design of PowerStore within our VMware virtualized environment is critical for our biological and medical research," said Davini. "The performance is good, and the platform offers the outstanding scalability we were looking for."

With this enhanced infrastructure, PowerStore's 'always on' data reduction, upgrade and integration features, as well as software characteristics, helps the University to focus on innovation by improving efficiency and lowering costs without compromising performance.

PowerScale was deployed to collect, preserve and analyze the raw data from large scientific instruments, using AI techniques to support research across several disciplines. "PowerScale was the natural solution for us, for our bare metal, HPC and the AI environment." said Davini.

Top marks for data security

For many educational institutions, it's not about 'if' cyberattacks will happen, but rather 'when' they will strike.

The integrity and availability of this raw data is crucial— not only because of the cost of data acquisition, but the efficiency of processing and ability to produce pre-filtered data representations that can be used in the later stages of the processing pipeline.

Thanks to Dell PowerMax, the University defended all its critical documents and data from a major cyberattack without any losses. Its immutable logs and Zero Trust environment serve as invaluable reinforcements to the University's security measures.



For us, PowerEdge represents innovation and stability. At every release cycle we see important innovation on a well consolidated framework."

Antonio Cisternino
CIO, University of Pisa

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The University of Pisa preserves the past as well as shaping the future with PowerMax at the forefront of all critical workloads.

“We’re still preserving century-old documents,” said CIO Antonio Cisternino. “It’s important that this data is in a safe place.”

PowerMax protects these priceless heirlooms and gives staff and students the freedom to concentrate on innovating, by keeping their critical data safe with industry-leading encryption.

Partnering for educational excellence

The University of Pisa has a long-running partnership with Dell Technologies.

“I would say 90 to 95 percent of our systems are from Dell Technologies. A great part of our success is because of our Dell Technologies platforms, as well as the support and strong relationship we have,” concludes Davini.

“ As someone who often deals with legal authorities because of minor and major security incidents, PowerMax’s immutable logs are a priceless feature.”

Maurizio Davini
CTO, University of Pisa

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