



## Executive Summary

# University of São Paulo Sets the Curve for Cloud in Education

### Overview

The University of São Paulo (USP) is a global research powerhouse. Brazil's largest and most prestigious public university, USP produces more doctorate degrees annually than any other university in the world and ranks fifth in the number of scientific articles published. Relentless dedication to advancing research in all areas of knowledge and accelerating the time to discovery have helped USP become one of the world's leading research institutions.

### Staying on Top

With 150 disparate IT environments, the university struggled to meet service levels and coordinate backups across its massive and complex environment. IT costs were rising, and individual organizations could not scale quickly enough to support the growing capacity and performance requirements of their users. To maintain its prominence among the world's most competitive and innovative institutions, USP needed a fast and flexible IT infrastructure that could stay a step ahead of users' needs.

"Our users have extreme requirements for storage and processor capacity. We have huge volumes of climate and genomic data that require high-capacity, high-performance systems for analysis," explains Antonio Roque Dechen, EVP of administration and professor at the Luiz de Queiroz College of Agriculture at USP.

Provisioning new IT resources was a costly and bureaucratic process that could take up to a year to complete. "It was painful for the researchers to have to wait on the purchase process to pursue their work," adds Cyrano Rizzo, director of vertical data center at USP. "An average project could cost around BRL\$200,000 (US\$88,800) depending on hardware and support requirements. When the research was complete, we'd be left with expensive, highly specialized equipment that no one else could use."

### Partnering for Success

In 2012, USP embarked on one of the most ambitious cloud projects in all of Latin America. The project, now known as "Cloud USP," would consolidate the university's 150 data centers into 6 and bring all of its corporate, educational, and research environments together in a massive private cloud built on FlexPod.

"We needed a high level of integration with the flexibility to support everything from simple workloads to high-performance computing and graphics processing," explains Luiz Natal Rossi, director of IT department and professors at the Polytechnic School at USP.

### Key Highlights

#### Challenge

Accelerate research breakthroughs to maintain competitive edge among the world's top institutions.

#### Solution

Consolidate 150 disparate IT environments into a massive private cloud based on FlexPod® Datacenter with Citrix CloudPlatform.

#### Results

- Slashed delivery time for IT services from months to minutes
- Delivered a mobile-enabled cloud platform for remote research and online instruction
- Reduced storage requirements by 90% despite 300% growth in data
- Freed 30% of IT headcount for strategic projects

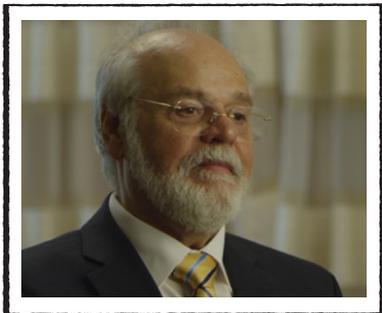


“The quality of support from NetApp, Cisco, and Citrix has been outstanding,” adds Natal. “The four of us worked together not as buyer and sellers but as a team.”

Even with data growth in excess of 300% in just two years, Cloud USP has cut storage requirements by 90% and dramatically decreased the total cost of IT. “It was a gain for the university in terms of manpower. We’ve also been able to free more than 30% of our IT headcount: not let them go, but help them grow into more strategic positions,” adds Natal. “It was important for us to transform our organization as the technology was transformed by the cloud.”

### Accelerating Critical Research

Now, instead of taking a year or more to provision IT resources for research projects, it takes just hours, sometimes minutes. Research can begin earlier and finish more quickly, reinforcing USP’s position as one of the world’s leading universities. “The cloud has enabled researchers to obtain results much, much faster, which has actually increased the adoption of information technology at the university,” says Roque.



“Cloud USP puts us in a position of international differentiation and makes sure that we will continue to be a pioneering force in education and research.”

**Antonio Roque Dechen**  
EVP of administration and professor  
Luiz de Queiroz College of Agriculture, USP.

Cloud USP accelerates research breakthroughs by supporting secure and reliable mobile access to vital educational tools and research from anywhere in the world. From field teams studying tropical diseases in the Amazon to scientists stationed in Antarctica, researchers from USP are now able to immediately upload, share, and analyze data in the field.

“If you want to study tropical diseases, you have to go where they’re really a problem,” explains Roque. “We have an advanced research unit 5,000 kilometers away in the Amazon studying these illnesses where they occur. In the past, they would have to bring the data from the Amazon back to São Paulo. But today, they can go anywhere in the world and immediately be working with their data from the cloud.”

### Leading the Way

Today, Cloud USP provides access to online education opportunities to more than 150,000 students on campus and across the globe. Students are accelerating learning and enriching their educations with unprecedented access to real-time lectures, fast access to e-mail, and digitized access to the school’s library and museum collections.

Extension schools in remote areas of the country, such as the Dentistry School of Bauru, are able to reach underserved areas of the population and access the same rich educational resources as their counterparts in São Paulo. Improved mobility is also enabling innovative dual degree programs with universities abroad. More than a study abroad program, USP’s dual degree programs enable students to complete part of their coursework at USP and the rest at an international university to earn diplomas from both institutions.

“USP is a university of international standard,” says Roque. “Today, every department at USP has students studying abroad for one year or two years. It is important for us not only to support our instructors and researchers in international areas, but also to enable our students to have access to courses abroad.”

The first and largest educational private cloud deployment in Latin America, Cloud USP is attracting the attention of other educational and research organizations in the region, which now look to USP as a model for cloud in education. USP also has plans to open its private cloud to offer Cloud USP as a service to other research institutions in Brazil. It is confident that when it does, it will be able to deliver the same high levels of service, performance, and security to all of its users.

“It’s good to be a pioneer. Future cloud deployments in Brazil will be able to look to Cloud USP for guidance and support,” says Roque. “Cloud USP puts us in a position of international differentiation and makes sure that we will continue to be a pioneering force in education and research.”



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