

Cloud Computing Delivers Education to Millions



Cloud Computing

“Cloud computing has transformed the way we think about computing and communication, data storage and access, and collaborative work. Cloud-based applications and services are available to many school students today, and more schools are employing cloud computing solutions all the time. What still remains to be developed is the capacity for the cloud to help students engage in real research and participate in global learning communities.”

Horizon Report,
New Media Consortium

As the world becomes more and more connected through technology networks, the question we had to ask ourselves is, “How do we meet the challenge of an ever-growing need for qualified information and communications technology (ICT) workers around the globe?”

For nearly 15 years, the Cisco Networking Academy® program has offered its universal online curricula and professional development for instructors, free of charge to education institutions, non-governmental organizations (NGOs), nonprofits, and governments around the world. Using the power of cloud computing, Cisco Networking Academy now connects a community of 20,000 ICT educators dedicated to preparing students to become skilled professionals.

Winning accolades from education organizations and government administrations around the globe, Cisco Networking Academy partners with the public sector to create opportunities for the next generation of learners to transform the teaching and learning experience.

The Challenge: Deliver a Universal Curriculum to Thousands of Students Worldwide

In 1997, Cisco began uncovering a serious problem. Customers were buying networking equipment but found a lack of qualified, skilled ICT personnel who could install, support, and maintain their networks. An enterprising Cisco sales engineer recognized the problem and pulled a team of people together to develop an educational model that would provide free, online ICT education to academic institutions.

The model caught on and developed into a well-respected ICT education program called Cisco Networking Academy. As word spread, the initiative gained interest around the world. Soon, the next challenge came with managing the growth while maintaining the high levels of quality established by the Networking Academy developers.

Networking Academy is Different and Better

According to José António Contente, Regional Secretary for Science, Technology, and Infrastructures in Azores, Portugal, Networking Academy is different and better than other available programs. "It is an international network of academies that share the same platform, with constantly updated content, providing easy and instant access for all its users," Mr. Contente says. "Trainers have access to and work on electronic platforms that promote collaborative projects and the creation of genuine learning communities in cyberspace. Instituting Networking Academy seemed to us a natural way to achieve technological growth and for the preparation of new generations, according to internationally accredited standards and benchmarks provided by Cisco."

www.cisco.com/go/wlc

The Solution: Cloud Computing Powered by the Network

The Networking Academy team worked to define a solution that would create flexibility and extensibility as the program grew. The team made a decision to build its solution while migrating to a cloud computing model for the program.

The "cloud" is a term for the delivery of computing as a service rather than a product. Shared resources, software, and information are provided to computers and other devices as a utility over the network. Cloud applications harness resources of computers to distribute applications and provide storage and processing power to users. Education institutions are finding these solutions provide access to more applications for less money with less overhead and faster provisioning, allowing IT to focus on Educational performance.

As a networking leader, Cisco understood what needed to be done to ensure growth, security, and continued quality. The Networking Academy team decided to utilize cloud computing to provide a more streamlined method for mobilizing the instructor community and deploying the ICT education curriculum. Therefore, a decision was made to migrate the technology platform used to deliver the program's offering from a traditional content-access tool to a private cloud environment, and introduce Academy Connection.

Academy Connection is an online portal that leverages an on-demand "Software as a Service" (SaaS) delivery model. It enables easy management of the users, classes, courses, curricula, and assessment tools. The portal links academies to other communities and services that provide 24/7 professional development. This tool has enabled Cisco to form a broader collaboration community among program instructors involved in networking and ICT. The utilization of cloud computing enabled the deployment of the portal and allowed IT to support the Cisco Networking Academy program with an on-demand, network-based, shared pool of configurable computing resources that could be rapidly deployed based on the needs of the academies, instructors, and students.

As the program continued to evolve and grow, Cisco worked to accommodate expansion. Through the use of the Cisco® Data Center, the Networking Academy IT team was able to consolidate, virtualize, and automate the delivery of applications including real time video, data, and integrated voice to remote users; the network is uniquely capable of accelerating these applications. This change created an opportunity for the academies and instructors to exploit the full benefits of virtualization by replicating the networking process. This method provided students the ability to practice their skill in an environment that was easy to access and manage. For instructors teaching networking skills, this benefit freed institutions from purchasing costly equipment to run demonstrations and learning modules. Utilizing this innovation lowered the overall investment in hardware while creating an opportunity for expansion and support of academies and professional development for instructors.

The Networking Academy team also introduced Cisco Adaptive Security Appliances (ASA), Unified Computing Architecture (UCS) and Vblock, which provided a secure,

Malaysia Higher Education prepares to train 1.65 million workers

Led by Director General Md Nor Bin Yusof, Malaysia's Higher Education for Polytechnics has an ambitious goal for the next 10 years: prepare a projected total of 1.65 million workers for technical and vocational fields. To train this impressive number of workers, Polytechnics must attract and engage Digital Native students. According to the director general, Cisco® Networking Academy® is an important component of this massive training effort in Malaysia. "Now, in the age of digital technologies, there are many ways to improve our education delivery system," he says. "Networking Academy is part of our program to enhance education."

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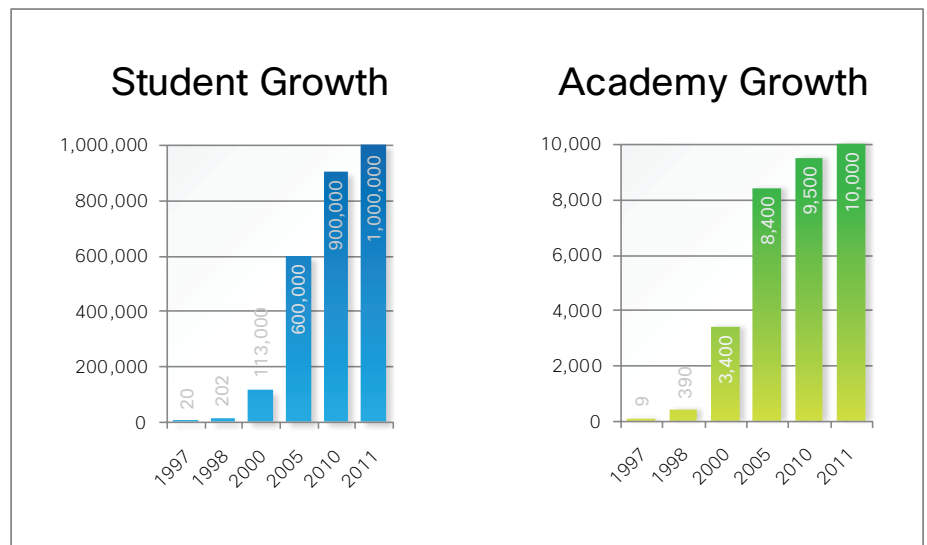
flexible platform, allowing institutions to rapidly respond to changing demands and accelerate delivery of new content.

Because of Cisco's architectural approach and technology innovation, the team's decision early on to move to cloud computing provided the infrastructure required to enable students, instructors, and academies to effectively utilize the Networking Academy curricula. Cisco Networking Academies are now well positioned for future growth and to meet the growing global demand for a well-prepared and skilled ICT workforce.

The Impact: Impressive numbers continue to grow

Cisco Networking Academy utilizes the network, which provides the infrastructure for delivery of a blended learning model. The model combines highly effective in-classroom learning with innovative online e-learning curricula and assessments that help students develop the 21st century knowledge and skills required for an effective workforce. It is the network that makes education clouds possible.

Since inception, Cisco Networking Academy has touched the lives of four million students, with one million students engaged in learning this year. Cisco is proud to call itself the World's Largest Classroom as it celebrates the global community of instructors, students, administrators, and partners worldwide.



As more Institutions and organizations utilize cloud computing in conjunction with the Cisco Networking Academy program, they begin to realize the cost benefits of increased service capacity, flexibility, reduction of their IT footprint, and optimization of existing investment in hardware. With cloud computing, educators are putting resources back to the classrooms.

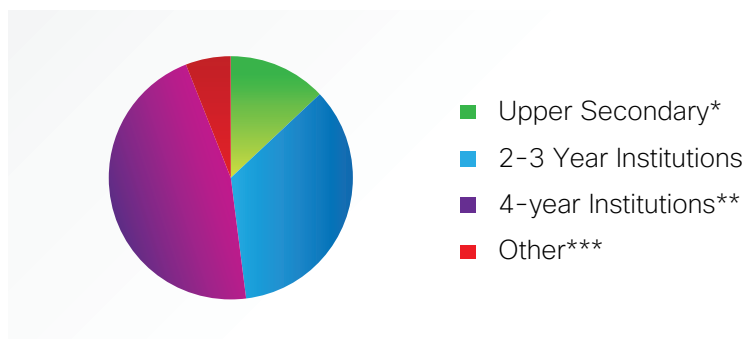
The Cisco Networking Academy partners with public and private institutions such as schools, universities, businesses, NGOs, nonprofits, and governments to deliver

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Cloud computing includes three technology areas: cloud-based applications, development platforms, and massive computing resources for storage and processing. The following cloud-computing technology components have supported the phenomenal growth of the Networking Academy:

- ASA (Adaptive Security Appliances): integrates industry-leading firewalls, VPN technology, intrusion prevention, content security, and unified communications, all in a single unified platform.
- UCS (Unified Computing System): improves IT responsiveness to rapidly changing business demands and accelerates delivery of new services.
- Vblock Virtualization: provides world-class computers, network, storage, management, and virtualization through preconfigured, scalable platforms that help accelerate deployment of new learning initiatives and reduce overall operating costs.

Student by Education Level



* includes 6-9 Grade
 ** includes Post Graduate (when Academy has also selected 4 yr)
 *** includes Post Graduate (when Academy has NOT also selected 4 yr), Other & Unspecified

innovative ICT courses, increase access to ICT education and potential career opportunities, and help ensure that students and instructors have the resources they need to accomplish their jobs.

Cisco Networking Academy is just one of the many initiatives Cisco has put into place to provide long-term benefits to communities around the world through the use of network technology.

To learn more about:

Cisco Networking Academy www.cisco.com/go/netacad

Cisco Education Solutions www.cisco.com/go/education

Cisco Cloud Computing www.cisco.com/web/about/ent/cloud/

Corporate Social Responsibility: Impact multiplied

Cisco believes that business should be conducted in a way that respects—and benefits—society, the environment, and individuals. Cisco's commitment to Corporate Social Responsibility (CSR) includes investing in the well-being of people and communities around the world, fostering ethical and sustainable business practices, and building a workplace where our employees can thrive.

Cisco CSR multiplies social impact by adding the passion of human networks to the reach of technological networks. By applying the same technology, expertise, and partnerships we use in our everyday business, Cisco helps transform lives, communities, and the planet.

