

Learning in the Cloud

BY RAMESH RAMANI

Cloud technology is an excellent way to sync learning and teaching and to align teaching, technology and collaboration to successfully meet business goals.

Today, due to tightened budgets and diminishing returns, a company's senior leadership is challenged to demonstrate the value of its learning and development investments. Leaders are being asked to directly correlate how corporate learning meets specific business goals and needs.

Up until a few years ago, this was an incredibly difficult task — if not outright impossible — due to technology and process constraints. We now have multiple opportunities to prove learning's relevance and its connection to business success in a world of changing demographics, preferences and generational styles. But there are other changes afoot. Learning and teaching are rapidly becoming interchangeable, and cloud technology is an excellent solution to enable this invaluable collaboration.

A Sky-High Solution

Traditionally, learning organizations have grappled with two challenges: technology limitations that inhibit the delivery of solutions to seemingly simple business goals — such as distributing the right information to the right people at the right time — and the more complex goal of aligning learning with business strategy and outcomes.

Further, in today's flat world, growth-oriented enterprises are more frequently deploying an extended enterprise to tap global sales for their products and services. However, current solutions for remote learning are not scalable enough yet to keep pace with most companies' needs. Plus, most organizations are dependent on centralized learning delivery infrastructures, which can be quite constraining. And, in certain situations, these organizations may incur uncontrollable cost and management issues.

That is why learning in the cloud can be a game-changer for senior leadership. It allows learning lead-

ers to instantly deliver content to a global audience, foster enterprisewide collaboration — by removing the constraints around learning and knowledge sharing — and align learning with performance — which drives innovation and helps employees achieve targeted business goals.

Cloud computing and storage, aka “the cloud” is an easy-to-manage data consumption and delivery model that can be sourced from anywhere in the world and is scaled or priced based on use.

Envision a cloud of computers hovering over Europe. Linked together, these computers allow users to access any data they want exactly when and where they need it, so there are no latency issues. This data also can be shared by different organizations, so organizations don't have to build a server farm in Europe. Instead, they can just buy in to one that already exists.

Another way cloud computing is defined is as software as a service (SaaS) — basically software that one can access via the Web that does not reside on a PC or on a company's network. However one classifies the cloud, this new global collaboration tool is ideal for business and learning leaders who have been asked to increase productivity while lowering costs and resource expenditures.

Welcome to Learning in the Cloud

Cloud computing can be traced back to technologies developed in the late 1990s to address the chronic IT challenges involved in supporting rapid enterprise expansion. Previously, organizations used dedicated servers and storage to handle individual workflows. This led to the creation of virtual data centers with vast seas of servers and storage to handle more users and demand.

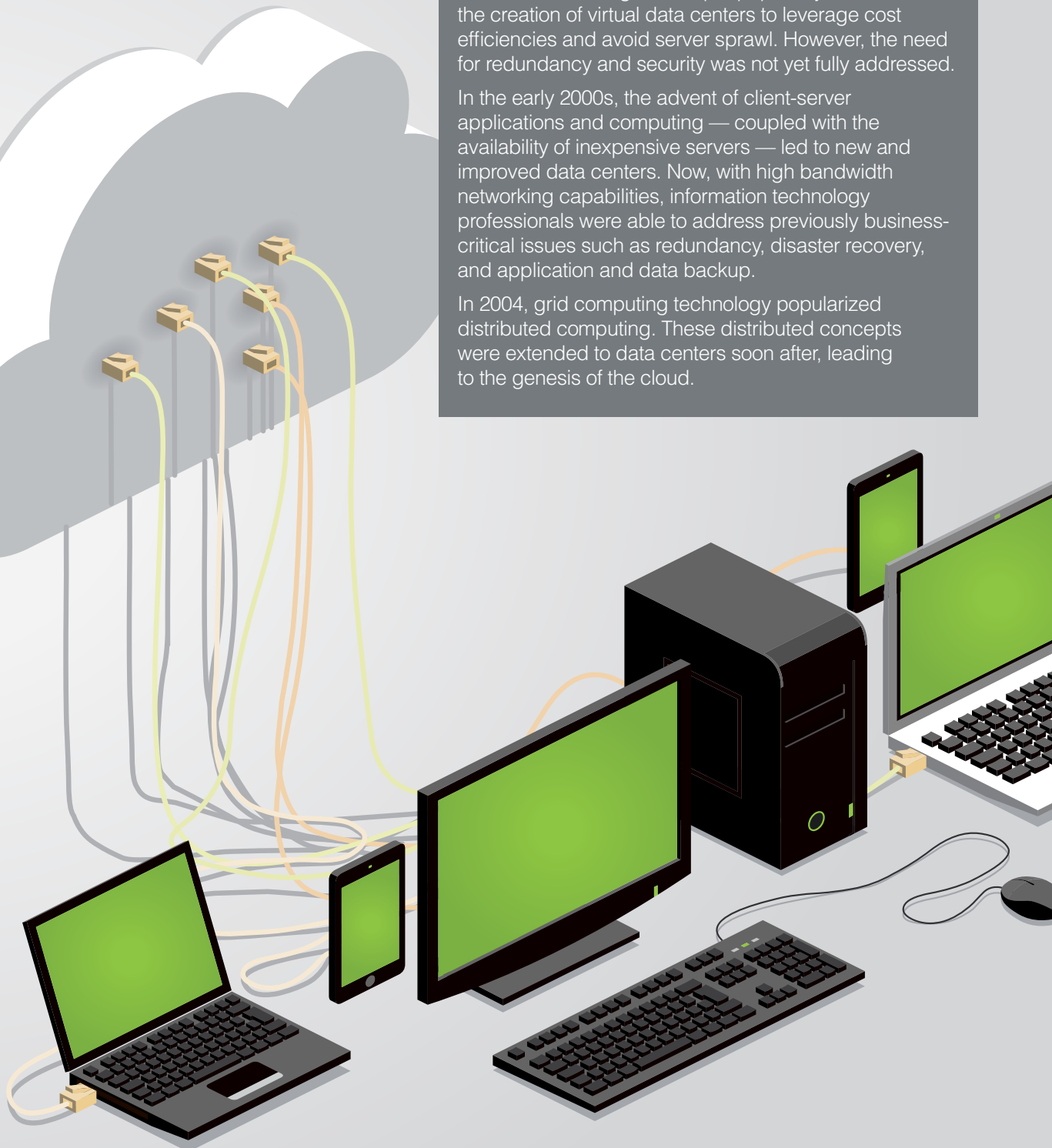
But companies wanted more. They wanted better redundancy or safety, scalability and reliability for business-critical data. So, in the mid-2000s, they built

VIRTUALIZATION SOFTWARE: THE GENESIS OF THE CLOUD

Invented by IBM in the 1960s, virtualization software was originally designed for mainframes and did not extend to client-server applications and servers until the late 1990s, when Windows and Linux servers gained rapid popularity. This led to the creation of virtual data centers to leverage cost efficiencies and avoid server sprawl. However, the need for redundancy and security was not yet fully addressed.

In the early 2000s, the advent of client-server applications and computing — coupled with the availability of inexpensive servers — led to new and improved data centers. Now, with high bandwidth networking capabilities, information technology professionals were able to address previously business-critical issues such as redundancy, disaster recovery, and application and data backup.

In 2004, grid computing technology popularized distributed computing. These distributed concepts were extended to data centers soon after, leading to the genesis of the cloud.



IN PRACTICE

MICROSOFT: USING THE CLOUD TO INSTRUCT A GLOBAL AUDIENCE

Are companies really using the cloud for their learning activities? Absolutely. The technology is sound, reliable and readily available. In November 2010, Microsoft used a cloud-based learning solution to disseminate complex subject matter to a global audience.

The company wanted to train 1,500 employees in virtual labs using various technical training courses on new and revised Microsoft business software products, which was previously done in-person at great expense. Because learners were from different geographies with different time zones, the training needed to be flexible enough to be delivered both on-demand and at preset intervals.

Microsoft also wanted to:

- Save time and money by using a technology that could be turned on and off quickly without sacrificing system quality, functionality and performance.
- Centrally manage its training by streamlining and synchronizing content with predetermined resource limits.
- Collect tangible metrics about the training's effectiveness to determine its ROI and alignment with business goals.

In less than six weeks, a customized, cloud-based learning solution was implemented to address all of the challenges listed above via the following functionalities:

- **Content distribution network (CDN):** A CDN provided enough bandwidth to support the massive data transfers and widespread data access required to host virtual labs.
- **Self-paced learning:** Users could review material when and where they had time, including stopping mid-session and restarting where they left off.
- **Centralized management:** Sessions were set up, monitored,

managed, adjusted, reviewed and retired via a central location for decreased manpower and increased control and efficacy.

- **Automated IT support:** To lower costs and ensure system availability, resource authorizations, limits and quotas were built in to virtual machines and storage usage. Alerts and status and login reports also were automated.
- **Real-time updates:** All learning material was governed by business rules and required compliance. However, sections could update and synchronize training content across all locations at any time to meet newly identified business goals.
- **Performance metrics:** Material effectiveness was regularly assessed and addressed thanks to predefined metrics and built-in business analytics.

"The program was well-received and rapidly adopted," said Zaakera Stratman, program manager at Microsoft. "We'd originally targeted 300 learners with a maximum of 500 attendees. But due to overwhelming demand, we quickly reconfigured our cloud to accommodate 600-plus learners. And with participants from 46 countries across 42 time zones, we incurred tremendous savings from travel and logistics alone when compared to previous on-site events."

Learner feedback is still being collected. "However, 33 percent of materials were downloaded after the program's completion — indicating a high level of ongoing user interest and engagement," Stratman said. "And that's why we signed on to reoffer these cloud-based, virtual training labs every six months for the next two years. They've proven to be of great value, ease and benefit." **CLO**

— Ramesh Ramani

and deployed a distributed data center architecture. It delivered what they were hoping for, but it also required high-bandwidth connectivity — also known as a "fat pipe" — that needed to be reliable, optimized and secured.

Further, managing this distributed data center architecture was complicated and time-consuming. Thus, Web services was born, a support system for a network's machine-to-machine interactions. Standardized software interoperation guidelines for applications running over numerous platforms or frameworks also were put in place.

The end result? The cloud integrated four ancestral technologies — virtualization, fat pipes, distributed data center architecture and Web services — to fashion an offering that's virtualized, standardized, automated, secure and self-serviceable. Out of need, we've collectively created a powerful technology solution that houses and distributes data for significant productivity gains and operational efficiencies.

With the cloud, learning leaders can better respond to fluctuating business conditions. They can dynamically scale resources up or down without burdening internal IT resources and infrastructure. A cloud-based learning solution also can be enabled to detect workload changes and automatically provision appropriate resources. This will help to shorten reaction times to competitive threats, deliver faster product rollouts simultaneously around the world and capitalize on more new opportunities, all while containing costs and managing risks.

When augmented with other technologies, such as a content distribution network — which enables clients to instantly access requested data from a server that is closest to their geographical location — a cloud-based learning system becomes a powerful tool to accurately distribute content across multiple geographies. It offers a level of optimization and efficiency that was previously impractical.

Now employees from all departments can cross-

pollinate learning tools, knowledge sharing, research, resources and more within a unified business ecosystem. They also can leverage the best practices and lessons learned from the organization's top performers. Users will know more, be more productive and drive innovation, which can lead to sustainable competitive gain.

The cloud's advanced data delivery system also can enhance learner experience and adoption. Because a cloud learning solution distributes prescriptive information to all users precisely when they need it, it helps employees better manage their time and better enjoy their time at work. Overall productivity is bound to improve.

Innovation is an integral part of a company's strategy, performance and growth. Cloud-based learning solutions enhance mindshare for improved participation and creativity by leveraging more engaging and dynamic rich media. Organizations can provide users with more actionable, real-world examples as well as global collaboration in real time so innovative ideas are no longer limited to geographically defined groups or communities; they're quickly leveraged across the entire enterprise.

Cloud-based learning solutions also facilitate powerful business analytics and reporting tools that can help a company gauge product effectiveness and adjust it per market or locale. For example, the success of a product in one country can be replicated in or targeted to another, and this can be implemented quickly without internal planning cycles. Further, the cloud gives users access to real-time information on a product's time to value for instant corrections.

These services enable a company to target specific learning needs and objectives with minimal investment and low risk. Viable applications include:

- **Product and service rollouts:** The cloud's scalability allows leaders to dramatically shorten the rollout time for new product training by delivering comprehensive training, education and knowledge transfer on a global scale, virtually.
- **New-hire training:** New hires can be on-boarded and achieve faster time to proficiency by leveraging a virtual environment that facilitates on-demand access to just-in-time resources, reference materials, knowledge objects, education and experts.
- **Business impact meetings:** An organization can respond to change faster and more effectively by collaborating, communicating and educating on demand via a digital learning environment.

Reaping the Rewards

The benefits of using a cloud-based architecture for learning activities are substantial.

1. **Scalability:** The cloud is specifically designed to scale on demand; it has redefined the speed and levels of a learning program's scalability.
2. **Stability:** Cloud technology is so stable that it's used by some of the Web's most popular and respected service organizations, including Bing, Google and Facebook.
3. **Reduced cost:** With a pay-per-use model, the cloud eliminates the costs associated with creating and maintaining static learning infrastructures.
4. **Improved usability:** Most cloud implementations require zero user training thanks to a highly intuitive, user-friendly design.

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Cloud technology has proven itself to be secure, stable and of tremendous value. Think of Facebook, Google and Amazon. Their platforms are efficiently and cost-effectively supporting far more usage than most global corporate learning infrastructures probably will ever need.

Since cloud infrastructures already exist, learning leaders simply need to partner with the right organization to leverage them. The key is to find a learning technology platform that meets a company's needs and is designed to work with the cloud. Current solutions can even utilize an existing learning management system. Learning leaders just need to explore the available options that work best for their organizations.

All in all, the cloud is still a nebulous concept for most of us to grasp, but it's becoming a hot topic in boardrooms around the world for good reason. It's already transformed the world of computing, and now it's revolutionizing the world of corporate learning and development. **CLO**

Ramesh Ramani is founder, president and CEO of Expertus. He can be reached at editor@clomedia.com.