

**LEARNING EXECUTIVE THINK TANK INSIGHTS**

# **Cloud Computing: An Evolving Infrastructure for Learning**

*Six Important Considerations to Examine Before Moving to The Cloud*

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**THINK TANK DISCUSSION**

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**THINK TANK PARTICIPANTS**

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## INTRODUCTION

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*70 percent of companies indicated that they would be implementing or expanding their use of cloud-based technology in 2011.*

Cloud computing—it's one of the most talked about subjects in the business world today. Many of the technologies we use every day exist or are supported by the cloud. Collaborative environments such as Facebook and LinkedIn are cloud based. Most mobile applications are hosted in the cloud. The cloud is even being touted as one of the most effective solutions for data back-up and storage.

While it was difficult to find examples of cloud computing in the learning organization just a few years ago, it is clear that it is firmly in place and will impact every level of training in the coming years. Consider these statistics:

- In 2009, 36 percent of companies in the United States were using or considering cloud computing.
- In 2010, 56 percent of companies in the United States were using at least one cloud application.
- 70 percent of companies indicated that they would be implementing or expanding their use of cloud-based technology in 2011.

There's no doubt learning executives recognize the advantages of cloud computing—many have already integrated it into their learning organizations. Let's consider cloud computing advantages:

- Learning content is more readily available and accessible in the cloud since it is an open system and resides outside a company's firewall.
- Content can be managed and sourced from anywhere within the cloud and is easily scalable to meet users' needs.
- The cloud provides rapid program implementation and revision. Content can be revised and published faster and easier.

*Twelve senior-level learning executives met to discuss how the emergence of cloud computing has impacted their organization and some of the obstacles they've experienced along the way.*

With as much optimism and real results as this technology presents, there are some challenges to consider as well. First is integration—how does the cloud fit into a company's existing learning management system? There are concerns about privacy and security—particularly how to protect proprietary content within the cloud. Others are concerned with the initial investment. Will the cloud deliver strategic value in addition to measurable cost-savings?

The emergence of cloud computing was introduced during our February, 2011 Learning Executive Think Tank event with “the cloud” becoming a major consideration in the strategic plans for corporate learning organizations. In our most recent Think Tank, we extended this discussion to address implementation strategies and the anticipated impact of this technology on learners, learning systems, processes, practices, and business performance.

Tom Kelly, former learning executive at Cisco and Oracle, and Jim Hanlin, President and Founder of Best Training Resources met with 12 senior-level learning executives to discuss how the emergence of cloud computing has impacted their organization and some of the obstacles they've experienced along the way. Specifically, these learning leaders were asked:

***What have been the benefits and challenges to your organization in implementing cloud technology?***

## KEY FINDINGS

*We identified six outcomes as a result of cloud computing. These outcomes include the benefits these learning executives have experienced as well as the struggles and challenges inherent in its implementation.*

Think Tank participants were asked:

- What is cloud computing and how is it affecting the development and delivery of training?
- What are the advantages/disadvantages of moving to the cloud?
- What is your cloud strategy and what does it look like for your organization?

Participants represented a variety of industries including: healthcare, software development, banking, business development, industrial supply and telecommunications. All participants reported they are using or are in the process of implementing cloud computing for training development, management, evaluation, and delivery.

From the discussion, we identified six considerations surrounding cloud computing. These issues include both the benefits and challenges inherent in its implementation.

While many of our participants have leaped into “the cloud” and are addressing challenges as they happen, a few are proceeding with a degree of caution—primarily due to privacy and security concerns.

### **1. Cloud computing creates global scalability**

Cloud computing enables content to be created anywhere and then harnessed in a central location and deployed globally. This ensures that content and delivery are consistent throughout the entire organization. By using a centralized hub within the cloud, everyone has access to the exact same information and resources. One learning executive, who works in business development, uses cloud technology in training new employees:

*“We use cloud technology to ‘on-board’ new employees. We are able to create a virtual training experience. In this space, actual calls or situations are replicated and recorded. This allows us to identify and address specific needs or deficiencies early in training. When employees go ‘live’ they are much better prepared to successfully handle a broader number of issues for our clients.”*

Another executive, from a software development company, shared how he uses the cloud in global team collaboration and training:

One of the biggest advantages of cloud computing, is that it incorporates a centralized platform for the free exchange of information, ideas and content.

*“We’ve implemented a number of cloud solutions to help users train and work at a very sophisticated level from anywhere in the world. Our web conferencing tool allows for virtual team collaboration. Our learning hub allows users to upload and share files on relevant topics. We are using a combination of technologies within the cloud to improve the information sharing and training of our users.”*

One of the biggest advantages of cloud computing is that it incorporates a centralized platform for the free exchange of information, ideas and content. This allows organizations to work collectively and in a consistent manner despite geographic location and technology platform. A think tank participant who works in technology development added how the cloud has helped centralize operations to better meet business objectives:

*“We are currently working to convert from an enterprise networked LMS to SaaS. In doing so, we have closely evaluated our global pricing alignment and our global footprint. It has given us the opportunity to centralize operations in the cloud and ensure that everything we do is serving our clients needs and our own objectives.”*

## 2. The cloud allows for greater ease and flexibility of content delivery

Perhaps the greatest impact of the cloud is on how, when, where and from whom learning takes place. The cloud makes content available to the user wherever, whenever, and from whomever, in the format that is flexible and learner-centric.

Our think tank participants are harnessing the cloud’s power with on-demand, searchable, and modularized content. One of our participants from, a software development company, shared how they have leveraged cloud technology in creating and deploying a virtual classroom:

*“Using the cloud, we have been able to create and implement a virtual classroom on a wide scale. Using videos, labs and other materials, users are able to complete a three-day technical training program virtually. The cloud enables us to bring everyone together in a single learning community.”*

*As the public cloud and enterprise IT worlds come together, so does an interesting challenge—who/what handles, owns, manages and offers secure access to data?*

### 3. The cloud enables users to seamlessly access content from multiple sources via a single portal

Another great advantage of the cloud, is that allows a single portal to access applications and content from numerous sources—even content from outside organizations and entities. This learner-centric approach gives the control to users to find content that is relevant to their needs.

As the public cloud and enterprise IT worlds come together, so does an interesting challenge—who/what handles, owns, manages and offers secure access to data? One of our learning executive participants has established single sign-on to help overcome this obstacle:

*“We’re in the process of establishing a single sign-on system for our users that allows them to access information without restriction. We wanted access to our portal to be transparent to the user—and single sign-on will allow them to click from source to source with ease, never seeing the back-end technology that drives this capability.”*

Another think tank participant indicated that single sign-on was a priority for their organization as well, adding that SSO eliminates the need for bookmarks or registrations at multiple access points.

*“Whether from a portal or an LMS, it is crucial that users are able to access all necessary information regardless of its source. It’s our job to make it easy for users to do this—without bookmarks, multiple registrations, and jumping around from site to site. Sometimes users need to see content from outside the enterprise (including our competitors). We have made our site a portal through which they can access the information they need. By doing so, we have become a trusted, go-to source for information.”*

### 4. The cloud changes how security is defined and managed

The issue of security and the cloud is a hot topic among our participants. Each learning leader is taking an approach unique to their needs and content to secure its presence in the cloud.

A popular solution to security appears to be a hybrid model—one that has both public and private components. A hybrid approach allows organizations to decide which applications and services are best served from the organization’s own data center while allowing other SaaS applications to seamlessly integrate into the cloud.

The security issue has limited the ability of many organizations to transition to the cloud. This has impacted the healthcare industry in particular.

There was much discussion among our participants about what information should be placed behind the corporate firewall. One of our participants commented:

*“We make sure that all of our proprietary learning content is housed behind the firewall. We are users of content in the cloud, not producers of content in the cloud.”*

The security issue has limited the ability of many organizations to transition to the cloud. This has impacted the health care industry in particular. One of our learning leaders, who works in the healthcare industry, commented:

*“We are trying to move to cloud computing, however, we need to ensure continuity of care for all patients, so that records and data can be accessed by any provider anywhere. However, due to federal privacy regulations (HIPPA), our industry is extremely cautious.”*

Another learning executive pointed out that there should be a distinction between security and permissions. Permissioning allows organizations to grant individuals access to various levels of information based on their position or relationship with the company and need to know. She added:

*“We have a robust permissioning model. The cloud enables us to allow partners access to certain data and access certain places within our cloud. In the old model, we had to create two systems, the cloud allows us to house all of our content and data in a single location and regulate access.”*

At the request of a client, this learning executive had a team of hackers purposely attack their cloud, looking for areas of weakness and potential points of entry. This exercise has helped them generate a series of robust tests that they use to ensure the cloud is secure. Another learning leader added:

*“The issue of cloud security is really about control of content. Any system can be vulnerable to attack. Putting sensitive information outside the firewall doesn’t mean it is less secure, it just feels less secure.”*

*While the cloud simplifies an organization's need to install and maintain software; it does require a certain network bandwidth to operate efficiently.*

## 5. The decentralized nature of the cloud has made it difficult to access technical support

While content is gathered in a centralized location in the cloud, the individuals and companies that design the systems and software that support it are quite scattered. This presents a challenge, particularly when technical support is needed. Before the cloud, applications and information was maintained by an in-house IT department that understood the company's system and could service it efficiently. One learning leader noted:

*"One of our biggest challenges was finding a way to support our end users in the cloud. Most of the operations that design or service inside the cloud are small and do not have a large staff to offer tech support. In order to get the support we need from our providers we have established personal relationships with these companies—helping us to get around these issues."*

## 6. There are regional challenges in using the cloud

The system requirements of running cloud applications can be as little as a basic OS and web browser. And while the cloud simplifies an organization's need to install and maintain software; it does require a certain network bandwidth to operate efficiently. In a global business environment, this might pose a problem, particularly in areas of the world not so technologically astute. One of our think tank participants commented:

*"In the short term we are setting up labs and distance learning in a virtual manner. We have had some difficulties regarding disparate systems and levels of complexity across the board. There are so many people accessing information in so many different ways. This creates a challenge of creating content and a platform that can be accessed by everyone."*

Another learning leader added:

*"Connectivity issues and low access in many areas, such as South Africa, have been a big challenge for us. We are struggling to establish the infrastructure to accommodate all of the variations. Our main goal right now it to serve a majority of users and expand coverage as we are able."*

Language and connectivity issues are the most common challenge to global applications. On the macro level, the cloud is very efficient in training a broad and diverse group of users. On the micro level, however, the closer we get to end-user the more issues emerge.

## CONCLUSION

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Moving to the cloud is both a business and technical decision. It's important that learning leaders assess their organization's needs and come up with an approach that is right for them—one size does not fit all.

The possibilities of cloud computing are exciting and open up a whole new world of opportunity for creating and deploying training. The ability to centralize information and offer it in a flexible, learner-friendly way allows organizations to leverage content in ways that had not been previously possible.

While there seems to be zeal among many (particularly cloud computing vendors) to move as many systems as possible to the cloud, our think tank participants recommend a hybrid approach and close consideration of the challenges presented by security, permissioning, support and technical deficiencies. This does not mean that organizations should not take full advantage of cloud resources today—just proceed with caution.

## ABOUT THE LEARNING EXECUTIVE THINK TANK

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*Learning Executive Think Tanks are by invitation only and are held six times a year—five via conference call and one face-to-face roundtable discussion.*

The Learning Executive Think Tank, sponsored by Expertus, was created to bring key thinkers together to generate insights and best practices in order to help learning leaders run more effective organizations. For the future viability of the training industry, it's important to look at key issues affecting learning organizations so that we may give back to the training industry and learn from each other.

Learning Executive Think Tanks are by invitation only and are held six times a year—five via conference call and one face-to-face roundtable discussion. Think Tank participants are proven, senior-level learning executives who have long track records of successful leadership. In our discussions, we concentrate on real results and the business aspects of training.

### ABOUT EXPERTUS

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Expertus is the leading global provider of services that optimize the business impact of learning. For more than a decade, the firm's 500+ learning management professionals have defined and implemented plans, processes and technologies that transform training organizations—creating measurable value for the world's most successful corporations. Clients include ADP, Cisco, ConocoPhillips, EMC, Microsoft, Abbott, NetApp and Schlumberger. Every day at these and other companies, more than a million employees, customers and business partners are educated as a result of Expertus' innovative business strategies, outsourcing services and technology-rich solutions.

Based in Silicon Valley, Expertus serves its clients from offices in the US, UK and India. For more information, visit [www.expertus.com](http://www.expertus.com), or call toll-free 1-877-827-8160

## ROUNDTABLE HOSTS

**Tom Clancy**

Tom Clancy is Vice President of Education Services at EMC Corporation. At EMC, Tom has held various field and corporate roles, primarily in Sales Productivity and Partner Management, focusing on field development, best practices and change execution. Since 2002, his primary responsibility has been leadership of the education role for all internal and external audiences.

**Tom Kelly**

Tom Kelly has more than 25 years of experience in the education and training industry and has held positions at NetApp, Cisco, Oracle Corporation, Sun Microsystems, NeXT Corporation and Control Data Corporation. Tom is currently a trusted advisor for a growing list of clients, including small to mid-sized companies focusing on learning organizations systems and strategies.

**Jim Hanlin**

Jim Hanlin is President & Founder of Best Training Resources, a business development, staffing, and personnel recruitment company focused exclusively on the corporate training industry. Jim has been involved in education and training for over 35 years as a senior administrator at a community college, director of education for a professional engineering association and has founded and served as president and a member of the Board of Directors for three other companies focusing on the development of corporate training strategy and custom training programs.