

CHIEF LEARNING OFFICER

Technology Integration Services: Creating Convergence

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Convergence—whether of ideas, natural phenomena, networks or technology—is the process of creating new forms and function through the integration of individual components. Some components may already exist, and some may be new. Convergence can result as a part of a planned event, or it can simply happen through innovation, variation and experimentation.

The impact of convergence can be dramatic—examples throughout history illustrate its power and effect on business and society. The Center for the Study of Technology and Society notes that early inventors of the huge screw thread and the graduated thermometer never imagined their eventual use in medicine and industry, because early prototypes were too clunky or the applications were considered failures. Only when new modifications were made did these inventions take off. Computing and communications technologies have long been on the path toward convergence. The computer, originally designed to speed calculations, had its first big breakthrough when used to break cryptographic codes during World War II. People were seen as too slow for this type of work, and they needed to stop and eat, sleep and talk. The first digital computer was large enough to fill a room and had a communications speed of about 50 Baud—equivalent to about 10 bytes per second.

Today, we carry around 3-pound laptop computers, each networked with the others. We can only imagine the eventual impact of the handheld PDA. These devices have joined digital computing and communications within a pocket-size device that is convenient and flexible—the idea of being able to carry on a conversation, take photographs, watch movies and retrieve, review, modify and create information all from the same small device is pretty cool.

These developments in computing, communications and technol-

ogy, combined with process and service improvements, are influencing learning—and creating more powerful opportunities to affect businesses. Learning can now be delivered anywhere, at any time. We can collaborate with colleagues or experts to create learning opportunities within the context of their work. Learning objects or events can be tailored to a specific need, delivered to a specific individual in real time. This convergence of traditional training with new workforce development and performance improvement models has dramatically affected organizations' ability to drive productivity, accelerate speed to market and improve the effectiveness of their people.

As organizations develop learning strategies more closely aligned with their business strategies, they embrace learning as something that matters. New technical capabilities offer more profound opportunities than ever for learning integration. However, integrating learning into the business fabric creates significant technical and social challenges for organizations that choose to undertake such initiatives. A few companies have become benchmarks for their capacity to integrate learning within the fabric of their business: Cisco Systems for its innovative practices in providing personalized training and certification to partners and distributors; IBM for its many innovations in the design and delivery of learning to its workforce; Ernst & Young for blending technology, learning and development to drive superior service quality to clients; or

Pfizer for envisioning the impact of the convergence of training, support and analysis for market strategies. But what is the secret to successfully integrating the right set of strategies, technologies and applications to hit the mark in your organization?

The Road to Convergence

As many of these companies will tell you, the precursor to success is often the many challenges met by learning leaders as they explored new ideas, processes, methodologies and technologies for integrating learning into their business strategies. There is an alignment process that will help link your key business goals and requirements to your learning strategies and establish the necessary foundation upon which to achieve growth through learning. Also important is how to build an execution roadmap and requirements plan, ultimately building an integrated services solution that ensures learning effectiveness, alignment with business goals and the maximum return on your learning investment. Often, leveraging the experience of best practice suppliers, consultants or industry leaders to work with internal learning teams can help streamline this process as you evaluate and embark on the process of aligning learning, technology and business strategy.

For large enterprises, the first goal becomes to engage learners with the available options and build an infrastructure that allows them to move easily from service to service—registering for new courses, collaborating with colleagues, reviewing progress information, retrieving assignments, achieving certification, providing feedback, responding to mentoring requests, posting new materials for community review and always searching. The list goes on, but you get the idea. Integrated within the context of this experience, users also have continuous, flexible and straightforward access to content and relevant data repositories across the enterprise. Data from each activity and experience flows harmoniously and is easily retrieved and manipulated for reporting, “scorecarding” and review. All of this has to happen in a secure, reliable fashion that meets business requirements today and can be adjusted as requirements change over time.

Creating such a platform and integrating it into your existing business systems and processes is more than possible with today’s technologies, but doing so requires a lot of configuring and customizing. After it is successfully up and running, there are ongoing management, governance and support requirements to successfully operate it over time.

Infrastructure

Successful integration of learning is achievable only through a secure, reliable technology infrastructure. You would not build a house without a solid foundation, would you? The infrastructure required to deploy, manage and support your learning consists of the convergence of software, hardware, communications, facilities, processes and staff. Whether this infrastructure is created and managed internally using your internal IT resources or hosted by an application service provider (ASP), it is important that you fully define and establish the performance elements of your infrastructure through the development of service-level agreements and detailed business requirements dictating scope, scalability and maintenance of your platform infrastructure throughout its life cycle.

Here are some considerations that are often overlooked when integrating learning infrastructure with other business systems and processes:

- **Security:** Online security threats are constant for any organization. How prepared is your learning infrastructure to deal with these threats and protect your databases and learning applications? Learning must be created, packaged and delivered in a manner that harmonizes with your extensive efforts to secure the infrastructure and the desktop or laptop. If not comprehended on the Internet browser settings, some common elements—such as pop-up answers to questions, animation to reinforce a point or links to external sites to collect information—can defeat the entire learning experience.
- **Hardware, software and network administration:** Your platform infrastructure may include many devices and software elements—servers, switches, load balancers, applications, operating systems, etc. Did you open that port on the firewall to allow the course to be downloaded? Was the router configured to allow access to that third-party course content? While you don’t have to be an expert in how these elements operate, how well defined are the processes and how sufficient is the expertise to test, install, update and maintain these elements?
- **Capacity planning, monitoring and reporting:** Some organizations experience more capacity changes than others. Who do you work with to plan for these changes, and how will your capacity be monitored and adjustments made? What types of reports will you receive, and how frequently will they communicate your capacity status?
- **Help-desk support and problem resolution:** Once your platform is up and running, how will support issues be handled and by whom? What kind of turnaround can you expect?
- **Backup, failover and restore:** Your platform must be available continuously. In case of outages or other failures, do you have proper failover procedures and system redundancies to ensure an ongoing, high-performance platform operation?
- **Facilities management:** How secure are the facilities where your learning technologies reside? Is there backup power? Is there a redundant site? Are the internal controls and procedures that manage the facility sufficiently reliable?
- **Communications:** Is there sufficient bandwidth to meet the needs of that recently mandated course that the entire sales force must take? Is the response time of that distant location rapid enough to guarantee that the learner can effectively experience the learning opportunity? These types of issues must be addressed and readdressed daily.

Applications and Content

A strong infrastructure is critical, but from a user’s perspective, learning services are almost always executed and experienced through their interaction with an integrated suite of learning applications. Today, these applications are more robust and easier to use than ever before, and they are constantly improving. At their core are a learning management system (LMS), a

learning content management (LCMS) system (which includes development, delivery and management of content) and often a collaboration or conferencing application.

Other services critical to managing learning are supported by other applications, including assessment services, knowledge sharing, document management and retrieval services, classroom services, and performance management and reporting services, to name a few. Easy access to these services and usability considerations require close attention to their integration and to careful development of end-user specifications essential to their successful deployment and use.

Access to content also is a key service, and the demand for learning content will only continue to increase across your organization as learning requirements grow and shift. Whether you create your own content or contract with a provider to do it for you, this content must be integrated within other applications in your platform, as well as mapped to broader development plans for your learning population. Industry standards make the job of content integration easier, but we have not achieved convergence utopia yet. Each instance of content integration demands specific up-front design and development work in order to deliver the value and quality expected. Thus, learning content integration services become another essential ingredient in supporting this demand for new and updated content resources to meet changing business needs.

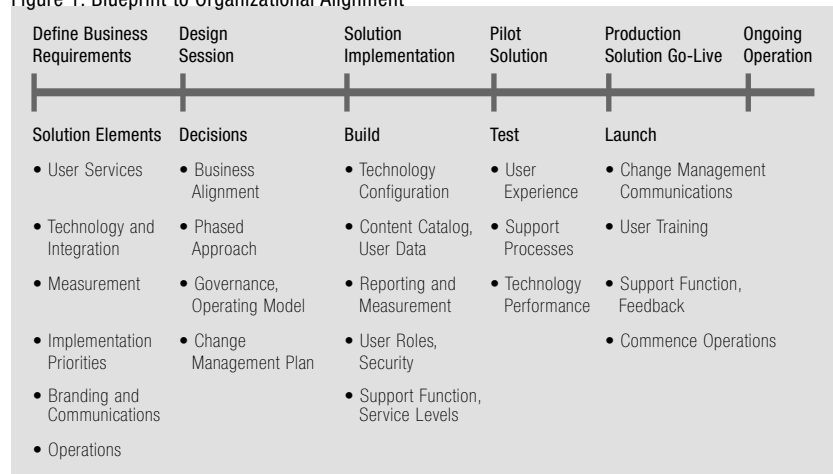
As new applications become available, upgrades and enhancements become an ongoing occurrence throughout a learning platform's life cycle. These changes are necessary for the learning platform to continue to deliver value to the organization, but they also need to be closely managed so they continue to align with the specific business and learning demands of each individual organization.

What You Get Is What You See

In many environments, learning options, opportunities and knowledge access visually coexist with other business services on the company portal. Portals present a consistent yet personalized face of the business for each user that comprises all of the content and services available to them. Creating personalized portals or gateways for learners—specific to company, role and performance goals, in the context of their workplace portal—creates the perfect convergence of knowledge and information. Canon USA has deployed a great example of this with its Learning Zone. Resellers and channel partners access a blend of product information and strategy in the context of their training. These types of portals are visible proof that learning has found a seat at the table when integrated with other key business applications and services.

Integrating learning functionality and applications with portal technology provides the potential to deliver customized

Figure 1: Blueprint to Organizational Alignment



access to the learning experience—information, learning roadmaps, pending and completed courses, collaboration and assessment. The portal also sets the tone and the standard for how an organization's brand is to be carried to those who access it. It allows users to access local resources within their information environment in addition to remote resources on the Internet, as well as facilitating communication and collaboration within communities. All of this convergence of information, communications and learning must be carefully designed into the learning portal integration process to maximize the importance of the employee experience with the company's brand and business goals.

The Home Stretch

Successful integration of learning into your business processes is complex but essential in getting the most out of your learning platform investments. And creating an infrastructure that can deliver successful learning integration at the organizational level guarantees business alignment convergence.

Once your platform is tested and performing as required, it is ready for launch. While launch completes a part of your journey toward successful learning and business convergence, it opens the door to the ongoing operation and management of your platform and all of its components. Celebrate it, promote it and because you have done your work to properly integrate all the elements involved, your learning platform should continue on a successful path and deliver the business value your organization seeks, securely and reliably.

The work of learning integration is difficult, but rewarding. As businesses seek solutions to performance challenges, the payoff for all this hard work becomes relevant and important. Learning can and should be integral to our work and our lives. That reality creates convergence with an impact that only a few years ago was nothing more than a glimmer in the eye of futurists, and now becomes the cornerstone for the next generation to build upon. ■

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