A Smarter Frankenstein: The Merging of E-Learning and Knowledge Management

By Tom Barron

Take an e-learning course. Chunk it into discrete learning bites. Surround it with technology that assesses a learner's needs and delivers the appropriate learning nuggets. Add collaborative tools that allow learners to share information. What do you get? Something that looks a whole lot like knowledge management.

Traditionally seen as separate disciplines whose practitioners might engage in a friendly watercooler chat now and again, training and knowledge management are converging into a new, technology-fueled creature. The beast combines formal training as represented by e-learning and the free-floating knowledge swirling through organizations that KM practices seek to snare and share.

But, like Frankenstein's monster, the technologies that fuse the two practices are outpacing management's ability to anticipate their combined impact. While the conceptual link is becoming clear, and the technologies underpinning e-learning and KM are merging, there remains some messy organizational issues for companies that have built separate learning and knowledge management disciplines. Those that haven't invested heavily in KM can thank the field for the awareness it has generated among upper management of the importance of organizational knowledge.

It's more than a little ironic, note some observers, that two fields that have taken very different paths to win the attention of senior management face a shared destiny. "Knowledge management has traditionally been very well positioned within organizations--they were telling CEOs they could strategically solve business problems and had IT at their beck and call," says Clark Aldrich, senior research analyst with GartnerGroup. "Counter that with internal training organizations--badly positioned politically, but with a relatively good reputation for coming in under budget." While KM practices have largely fallen short of their ambitious goals, e-learning has revitalized training's star as a strategic tool, he says.

"Both sides have a critical piece of the puzzle, and the best of each will form the new paradigm," says Aldrich, who uses a four-square grid to illustrate the path toward combined e-learning and KM (see below). "A year from now, boardroom conversations will have shifted from, 'Hmm, there are some similarities here' to, 'Why aren't these two groups working together?'"
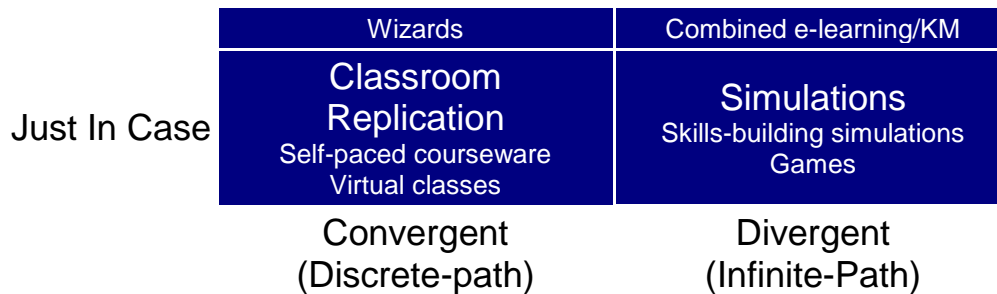
Just In Time	Embedded Help Performance support EPSS	Knowledge Management Traditional KM

	Wizards	Combined e-learning/KM
Just In Case	**Classroom Replication** Self-paced courseware Virtual classes	**Simulations** Skills-building simulations Games
	Convergent (Discrete-path)	Divergent (Infinite-Path)

The conceptual link

Any skeptics who question whether a link exists between KM, organizational learning, and the bottom line face a formidable opponent in a March report by The Conference Board. Based on a survey of 158 multinationals, the majority of them U.S.-based firms with more than $5 billion in annual revenues, the report found convincing evidence of their combined potential. Fully 80 percent of the respondents had some form of KM efforts under way, and KM and organizational learning "are increasingly similar in terms of the tactics and tools they employ," the study concludes.

"In general, there hasn't been enough of the linkage as there should be or will be in the future," says Karen Vander Linde, a partner with PriceWaterhouse-
Coopers and member of a working group that developed the report, "Beyond Knowledge Management: New Ways to Work and Learn." Most of the learning benefits documented by surveyed firms are attributable to their KM practices, says Vander Linde, and that raises an important question: "If KM is a great way to get learning to happen, shouldn't training departments be involved in harnessing KM?"

Though the report doesn't explore the relationship between knowledge management and e-learning directly--it was published before that buzzword caught hold--many of the corporations surveyed have developed substantial e-learning architectures. And it is the use of Web technologies for both e-learning and KM that provides a common medium to combine the practices, as discussed below.

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But there are some important differences between KM and e-learning that will need to be resolved for them to be merged effectively. Most significant is the training field's longstanding practice of assessment and testing to measure skills and knowledge, which is lacking in the KM field's creed of capturing and sharing real-time knowledge. The degree to which organizations can reconcile those diverging goals--and the ways in which technology vendors grapple with them--will prove pivotal in marrying e-learning and KM.

"Assessment is going to move from 'prove what you know' to strictly being used as a way to customize the content that you receive," predicts Aldrich. "That's going to be one of the biggest shifts for training organizations--to get away from the mindset of assess, test, certify."

Others aren't sure whether organizations will be willing to forgo the assurances provided by

testing and certification. "Measurement has always been about competition," writes learning theorist Roger Schank of the Institute for the Learning Sciences in a recent column on the organization's Website. "Companies want to hire the best person. Schools want to accept the best students. We care about grades because we want to know who won. No matter how much this is a bad thing for education, it will be very hard to convince all those people who are so heavily bought into this model of education that this is a really bad idea."

Nevertheless, the surging market for certification in the IT arena illustrates the premium that organizations are placing on verifiable skills--at least in the technical skills arena. Some think that a combined e-learning and KM discipline will be able to accommodate the need for testing and certification for certain types of skills and knowledge.

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An equally formidable conceptual hurdle facing training organizations will be their willingness to relinquish their role as sole arbiters of training content. In merging e-learning and KM practices, training's role will be to look after strategic training needs while helping decentralize content development by guiding subject matter experts in developing and sharing learning content. The first template-driven content authoring tools exist already; the organizational shifts called for in such a distributed learning scenario are still at their earliest stages in even the most forward-looking organizations.

"The new direction is to cater to the SME group," says Nathaniel Palmer, an analyst with Boston-based market research and consulting firm Delphi Group, which specializes in knowledge management consulting. Palmer sees the linking of formal learning and KM as the third phase in the latter's evolution. The first stages--successive developments of KM technology that seek to capture best practices passively--lacked the structure needed to succeed, he says.

"There's the recognition now that you're not going to capture knowledge that way," Palmer says of collaborative software approaches that form KM's legacy. "It's clear you have to capture knowledge in the way it's being communicated, by the people who are doing the communicating, and linking that knowledge to other content and content management tools that structure its delivery," he says. Rather than deconstruct what a top salesperson does to try and create a best practices model that catalogues techniques--an approach that's time-consuming and often overlooks many key intangibles--the new approach would be to capture that person in well-crafted role-playing scenarios, using either synchronous e-learning tools or asynchronous forums, he says. Doing so would provide learners a more direct insight into the salesperson's skills and allow the content to be generated more quickly.

The tightening cycles of product and service development facing businesses makes abandoning the centralized training content development model an imperative. "Content is a highly perishable good," says Aldrich. "The goal of learning organizations will be to help SMEs scan and package chunks of knowledge and get them to the needed audience as quickly as possible."

"Learning content that's eight months old will be considered outdated and useless," Aldrich says of a learning organization that's succeeded in merging e-learning and KM practices.

Organizational hurdles

Some significant organizational and cultural issues still stand in the way of a combined training and KM function--at least for organizations that have developed KM functions. Brook Manville, chief learning officer for e-learning technology developer Saba, was involved in the KM field's formative years as the first director of KM for management consultant McKinsey & Company. Particularly early on in that role, Manville says, there was a reluctance on the part of HR and other departments to embrace KM.

"I was frustrated because colleagues who were in those functions were hesitant to structurally integrate," says Manville of his role with McKinsey in the early 1990s. "There was enough of a difference between myself and my colleagues on what we wanted to do," and KM was seen as "another layer of complexity added to their already hectic jobs," he says.

"In many organizations, that continues to be the case," says Manville. "Both HR groups and the training world have traditionally been pretty allergic to technology." E-learning, and the Internet as a whole, have helped lower resistance to technology and forge convergences among HR, IT, and other departments, he says. "In forward-looking organizations, you're seeing more alliances among these groups and more integration at the technology level."

The gulf that has existed between training and KM is as much about departmental differences in perspective as it is about technology savvy, says another observer. "The focus on KM comes from strategy and marketing executives and the focus on learning comes from corporate training and HR staffs," notes Janet McAllister, former vice president for global learning for IBM, in The Conference Board report. "These groups do not really speak the same language, making the connection difficult." It will take strong leadership from CEOs and senior managers to "overcome these old corporate politics and roadblocks," she writes.

Knowledge Management: Definitions and Context

Just what is knowledge management--and how does it differ from "formal" learning?

In a report on the link between knowledge management and organizational learning, The Conference Board highlights the following definition of knowledge management from a 1999 U.S. Army report:

"Knowledge Management is an integrated, systematic approach to identifying, managing, and sharing all of an enterprise's information assets, including databases, documents, policies, and procedures, as well as previously unarticulated expertise and experience held by individual workers."

Formal learning refers to the courses, classes, or sessions that make up a learning intervention. E-learning has moved training to the desktop, where learning can be provided in self-paced (asynchronous) formats or in virtual classes through use of synchronous e-learning tools. As e-learning technologies have become more sophisticated, allowing learning to be tailored automatically based on an initial assessment of learner needs, experts see the evolution of learning content toward shorter learning chunks.

Technologies that enable such knowledge sharing as threaded discussion groups, chat rooms, synchronous meeting tools, and other collaborative software are among technologies from the KM field that are being adopted in e-learning settings. More sophisticated tools, such as knowledge databases that archive unstructured knowledge resources in ways that can quickly be found through keyword searches, form the next step in integrating e-learning and KM. As e-learning developers work out ways to store and manage learning content in modular, object-based formats, learning content could be served to users together with other knowledge resources from the same knowledge repository.

In a mature e-learning and KM implementation, knowledge workers will tap the same knowledge well for targeted e-learning, unstructured information, in-house experts, and outside resources.

A final challenge to be reckoned with at the organizational level will be to create incentives to

counter knowledge "hoarding" and prompt employees to share knowledge--a challenge that the KM field has grappled with for years. Ways to goad employees to turn their knowledge into learning content--including that favorite form of incentive, cash--are beginning to appear in technology platforms that combine e-learning and KM.

Key technologies

While organizational issues await resolution, the technologies that leverage e-learning and knowledge management are beginning to overlap in sundry ways. Many e-learning implementations routinely include such collaborative forums as threaded discussion groups for learners to share information. They represent the beginning of a shift toward collaborative approaches in learning that will accelerate as the line between e-learning and KM begins to blur.

"The best learning occurs in exchanges between people," says Davis Klaila, president of Celemi, a Sweden-based learning and change management consultant with U.S. offices in Simsbury, Connecticut. A learning intervention that combines the best of learning and KM would supplement how-to information with input from an employee's peers, Klaila says. "What's really effective about, say, PowerPoint, isn't the tool itself but how it's used to communicate ideas, so the ideal learning would include stories from people on how they've used it effectively," he says.

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E-learning will also move from distinct sessions that learners undertake to shorter interventions that address specific needs. Two technologies are paving the way in that regard: XML and learning object-based content design. XML, short for Extensible Markup Language, allows learning content to be labeled in detail, making it possible to customize e-learning content based on a learner's needs. The technology is on the path to replace HTML as the standard Web authoring language and is already being used by some e-learning providers as a means of providing on-the-fly customization of content. Object-based learning is a more ambitious scheme to manage learning with independent, reusable learning objects that can be combined to provide mass customized learning. (For details on both technologies, see "The Future of Digital Learning" and "All About ADL."

"We see XML as a key technology for tying learning to knowledge management systems," says James Sharpe, director of distributed learning technology for IBM Learning Services. For example, he says, IBM's recently formed MindSpan Solutions group is using the Web language to tie relevant e-learning and knowledge resources to various skill profiles; learners are matched with a skill profile through an assessment mechanism. The group is also developing learning object-based architectures that Sharpe says will ultimately be combined with XML to further customize learning.

"These technologies, as we evolve them, become crucial to ensuring there's a solid planning phase that aligns learning with business objectives, as well as an efficient way to deliver e-learning and organizational knowledge," Sharpe says.

Template-based authoring tools that allow SMEs to put their knowledge into content format are also an important part of the combined e-learning and KM picture. Such tools, which use instructional design principles to guide users in authoring content, help free knowledge that's locked in reservoirs throughout an organization--provided an incentive exists to goad SMEs to use them.

E-learning product and service provider Click2learn.com earlier this year introduced two Web-based authoring tools that target SMEs, and has seen interesting results on its e-Learning Network and on corporate sites managed by the company. "The idea was to put knowledge capture tools in the hands of a larger community," says John Martin, C2L's product marketing manager. "We're beginning to see their adoption and some innovative ways in which they're being used." For instance, he says some members of its e-Learning Network--a public learning portal that offers third-party content--are authoring content and offering it over the network, collecting royalties for each purchase. Corporate clients can also upload content to the public site to garner revenues from their content.

The idea of a mini-economy around knowledge is how Aldrich says e-learning and KM can create incentives to share knowledge. The same capitalist model can be applied internally, providing rewards to individuals based on the degree to which content they author is used by others. But he says authoring tools will need to be even simpler and more compelling for this vision to materialize.

"Text isn't how most SMEs view as the best way to disseminate information," says Aldrich, who focuses his research on trends that will effect e-learning over the next one to five years. The primary e-learning tool of the e-learning and KM era will be synchronous e-learning tools that will be used to quickly record and disseminate SME knowledge, Aldrich predicts. Those tools, subsequent iterations of today's synchronous products, will allow content experts to author, edit, and metatag content that can be served to learners as needed in an asynchronous format. "Virtual classroom tools will become the knowledge capture tools of the future," he predicts.

Others disagree on whether and when today's text-based authoring environments will be replaced by audio- or video-based tools, and note that building instructional design into synchronous e-learning tools is uncharted territory. "You'll still need to start with a text environment, even if you end up producing in AV," says IBM's Sharpe.

Market landscape

In the meantime, e-learning vendors are tuning in to the training community's growing interest in KM practices and are positioning themselves accordingly. The term *knowledge management* appears with increasing frequency in product and service descriptions, and a small but growing number of firms are staking claims in the uncharted middle ground between the two disciplines. Pensare, Arista Knowledge Systems (recently purchased by DigitalThink) and startup gForce are among the e-learning technology developers whose offerings draw from both camps. Others whose products emphasize collaborative features over e-learning content and management functions include Athenium, Communispace, and Worklinks.

Established e-learning management vendors are also adding tools to encompass KM functions. Click2learn's SME-geared content authoring tools were created in pursuit of the KM model of knowledge sharing, says Martin. Saba's Manville says organizations need to look at knowledge sharing beyond their own borders to encompass their extended enterprises, and emphasizes the ability of its system to provide self-service access to learning and management features. IBM MindSpan Solutions, which encompasses IBM subsidiary Lotus Corporation's LearningSpace LMS, points to its pioneering role in fostering knowledge management capabilities with its Lotus Notes product line. Analysts name Docent and KnowledgePlanet.com among other e-learning players that are at least paying lip service to knowledge management features.

"We believe that the merger between e-learning and KM is inevitable, but it's more a matter of positioning than anything else at this point," cautions Cornelia Weggen, an analyst with investment bank H.R. Hambrecht & Company who covers the e-learning market from an investment perspective. Weggen predicts it will be easier for e-learning vendors to add KM

capabilities to their products than for companies in the KM field to adopt e-learning management functions.

"What e-learning has done is set a context for KM," concludes Aldrich. "If you don't have that, the issue becomes how to catalog the knowledge in a company--a huge task, very political, and often very ugly. E-learning courses provide a very quick way to provide a framework for managing knowledge in an organization."

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