E-Learning, the Lucent Way

Lucent extends its e-learning enterprise to customers: Customer satisfaction guaranteed.

Part 4 in Gold's five-part series on enterprise e-learning

Integrating a learning management system to work with other networks has proven a challenge that many organizations have yet to accomplish—mostly because they hesitate to spend a lot of time and money towards a function that's considered overhead.

Communications network provider Lucent Technologies, however, devoted significant resources to integrate its e-learning enterprise not only with the HR department, but also two other backend office systems. That's because Lucent extends its product training to customers and business partners. The training is often included as part of its product line because it has proven to be a necessary component.

"Training has a direct effect on customer satisfaction with Lucent's products and solutions," says David Roller, senior manager of delivery platforms for Lucent's information products and training organization. "It also influences our associates' proficiency to sell and service customers."

By Martha Gold

So, Lucent's LMS, a Saba product, is also connected with the company's customer relations management applications and its e-business architecture. The process of connecting those systems, which provide information ranging from customer profiles to course completion and billing records, to work together as a unit involved creating a web of linkages to each network. Such a sophisticated system can be expected from a company such as Lucent, which designs intricate and complex communication networks for communications service providers.

The product training courses on installing, repairing, and operating Lucent equipment are available to customers via the Website ◁⁾) lucent.com. In addition to taking electronically delivered courses, users register and pay for classes and track their progress at the Website. Lucent is now working on making such discrete tasks appear to happen in one spot, although the tasks will actually be conducted within the three different systems. These systems work with the company's LMS to ensure that training users' records are updated, internal departments and external customers are billed, and users are tracked.

Well connected

Among the three systems that work with the LMS, the HR system is the only one devoted solely to maintaining employee information. The HR system provides critical data to the LMS, feeding it such information as job functions, supervisory chains, locations, and identity authentication. That enables the company to keep track of employees' progress in completing necessary training automatically. While the HR system monitors employees, the CRM applications track external customers. Currently, the company is in the process of linking the LMS with the CRM application that stores customer metadata, in order to streamline customer accounts set up in Saba.

"That way, customers don't have to go to a completely different system to get set up for training," says Roller. "They enter their information one time and from there they can move seamlessly to any store inside the Lucent.com mall, of which training is one. It authenticates customers and enables us to present them with a tailored learning experience."

Lucent also provides training to its business partners, who are required to be certified in Lucent's product offers in order to receive special allowances and entitlements. Currently, no direct connections exist for Lucent's business partners to its training offerings. In the future, Lucent plans to make the process more automated.

The e-business infrastructure conducts all of Lucent's billing and ordering. Most product training courses charge tuition to external customers, a cost that's often included in sales contracts. However, more general skills courses for employees are often provided at no charge although a small fee is occasionally tacked on to cover licensing.

Lucent has made payment for its courses as easy as ordering clothing and other products online: Customers registered through the training Website can pay for their courses with a credit card. Lucent has a real-time link to Chase Merchant Bank for credit card processing and another connection that loops back to Lucent's e-business platform, which sends payment information to the LMS. "We do similar feeds through the platform for purchase order billing, internal expense billing, and charges against free seat contracts," says Roller.

One system, one look, one infrastructure

Lucent purchased its LMS three years ago after it had completed acquisition of a number of companies. Each company came with its own training platform; some organizations with international divisions had more than one. Rather than allow each company to keep its platform, Lu-

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cent decided to bring together the disparate training departments under one set of architecture. One architecture allowed Lucent to purchase more off-the-shelf training and reduce the need to customize new courses, which would ultimately save time and money, and broaden selection of course content.

"The challenge was to consolidate all of those LMSs (more than a dozen different systems) into a single system and standardize and streamline the support functions," says Roller.

Lucent embarked on an in-depth search by putting together a complete business case for an LMS capable of meeting its extensive infrastructure requirements. That entailed gathering together the business owners of the different divisions to discuss how to join all of the separate training systems. The owners defined their requirements, which were used to select an enterprise-wide LMS, choosing Saba for its sturdiness and flexibility.

"We're talking about a global training enterprise with a sophisticated business model," says Roller. "Saba was the most robust system and required the least customization to meet our diverse needs."

The conversion over to one LMS from many different platforms required a culture change, in addition to a switch in technology and tools. Each of the discrete organizations had to change its individual appearances, standards, rules, and approaches to meet Lucent's new standards.

"In the interest of uniformity, they gave up a certain amount of freedom and individuality, but the benefits to the customer easily outweighed those concerns," says Roller. "Once people got on the platform, they saw some real synergies. In the end, they gained capabilities that they couldn't have afforded on their own, simplified things for their customers, and got great visibility."

The departments didn't have to sacrifice their in-

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dividuality. Within the LMS framework that Roller and his team manage, the different departments retain the flexibility to customize their offerings and messages to their respective audiences.

"There are different audiences within Lucent, and each has its own requirements with respect to e-learning," says Roller. "We put the framework in place—the tools, technology, and architecture to be able to get e-learning elements from a number of different places and present them to users under a common look and feel, common access, and tracking and course descriptions."

E-learning migration
With the Saba LMS, which is AICC-compliant, Lucent is able to purchase more off-the-shelf content and grow its course selection without having to spend a lot of time customizing courses, according to Margaret Pasterchik, project manager of delivery platforms for Lucent's information products and training organization. Lucent currently uses courses from a wide variety of vendors, including Netg, Telecommunications Research Associates, Interactive Services, Award Solutions, Question Mark for colluding assessments and surveys, CD-ROMs from the Richardson Company, and a lot of internally developed content. It also uses Simentor, a simulation-authoring tool.

As Lucent increases its electronically delivered courseware, it's also working on increasing the percentage of learners who take courses online. Today, nearly half (49 percent) of Lucent's users take alternately delivered courses, including Web-based, CD-ROMs, and other electronically delivered media. The rest of the users (51 percent) attend classroom-based training, many of which are product training courses.

"To ensure that our customers become proficient on some of our advanced equipment, there's simply

no substitute for hands-on and classroom-based training," says Roller. "In our environment, the e-learning option tends to be better suited for courses in which the hands-on experience isn't as critical."

Lucent is working on getting more employees and customers to use its e-learning selections—a campaign that Roller says is working because it provides customers with more immediate training and information needs.

Breaking it down

"Our blended learning approach enables us to deliver the right content to the right person, in the right language at the right time, using the right media," says Roller. "It all comes together at the platform level."

In making information more readily available, Lucent is changing its authoring platform to one that breaks down information into smaller, reusable chunks. That strategy gives more immediate access to needed information without requiring employees or customers to wade through hundreds of pages or search engine entries.

"In recent years, we've changed over to a predominantly SGML/XML-type of authoring methodology using such writing styles as information mapping to facilitate the creation of smaller, more self-contained modules," says Roller.

The broken-down pieces of data, which will be tagged and managed using a special metadata taxonomy, will be made available to employees and external customers. In addition to the SGML/XML initiative, Lucent is looking into ways to recognize and enable access to information objects embedded in vast stores of legacy information.

"We have a huge legacy library of PDF files, and we've devised an object-level access methodology that involves a virtual chunking of those files," says Roller.

Roller's team devised a mechanized process for creating named destinations for each of the topics embedded in PDF files. The team then formed another process that exacts those destinations and their associated topical strings and writes them to an external knowledge base. There are now more than 1 million topics in the database. Users can search on those topics and drill straight into the content, a virtual chunking of the files.

"In a virtual sense, we've busted up the book," says Roller. "Users can open up a topic and go straight to the page where that topic begins. So it behaves like a book fragment even though the book itself isn't split."

Offering more bite-sized pieces of information is part of Lucent's drive to provide more unstructured learning alternatives.

"We're heading towards more of an emphasis on the backend testing portion and away from focusing on course completion," says Roller. "We want to recognize skills attained through on-the-job learning, engineering notes, and other mediums."

As part of that goal, Lucent is working toward integrating training content with other types of product and task support information to ensure that all engineers and other professionals receive an equal level of information. For example, work instructions that reference certain tasks could contain hot links to training objects that describe in greater detail how to perform that task.

"We have the technology to link it, but we don't have content that has been busted apart at that level yet," says Roller. "But it's coming, and that's the direction we're moving." **T**D

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Making the Content Run

The Saba LMS, which is AICC-compliant, makes it easier for Lucent to run off-the-shelf content that's also AICC-compliant, but a lot of courseware requires intervention for all of its components to run properly.

"The first question we ask is, Can we launch it? We usually can because it's typically just a URL that we're launching off to," says Margaret Pasterchik, project manager for delivery platforms at Lucent. Pasterchik and a team of six men are the part of the information products and training platforms team responsible for ensuring that all of the content runs to its fullest capacity.

While launching usually isn't a problem, the other capabilities—bookmarking, scoring, and testing, for example—sometimes need a little extra coaxing from Pasterchik's team to work. Getting courseware to run at its fullest capacity is a task that can be simple and take only a few minutes, or become complex and take several days. The complexity of the task depends on the nature of the content, the delivery mechanism, and the degree of compliance with industry standards. Having set up numerous courses from a wide variety of vendors, Pasterchik and her team have learned a few tips on making courseware workable quickly.

Here are a few.

Don't assume AICC-compliant means plug-and-play. AICC compliance doesn't mean the same thing to all vendors, says Pasterchik. Though many courses designated to meet U.S-recognized standards work well, others require significant intervention or don't work at all.

"One vendor, for example, uses cookies for its bookmarking capabilities," says Pasterchik. "That works if the course is launched from a PC but not from a Sun Workstation, which is basically a monitor." For that problem, the vendor has created a patch to enable its courses to run.

For most cases, Pasterchik's team fixes noncompliant content by creating wrappers for them. It usually takes them a day or so to make a new course work on the LMS. But for each subsequent piece of software from that vendor, including other courses or updates, they can reuse the same fix, so no additional work is required, says Pasterchik.

The fancier the software, the more intervention it requires. "Usually the fancier the software, the more plug-ins and wrappers are needed to make them work," says Pasterchik. "Some software, such as Flash and ActiveX, make for an enlivening

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experience but require intervention to work. Sometimes, simpler is better."

Get in from the beginning during courseware purchasing negotiations. "We're making a concerted effort to become involved before the contract negotiations are done," says Pasterchik. "If we can get a sample of the courses, we can launch them, test them, and see in advance what kind of issues we face. It's much easier to get a vendor to make changes before the contract is signed, and that's what we're working to do."