

DELTA FORCE

At Cisco,
three business units
joined forces to keep
information flowing
and strategic skills
sharp in preparation
for the upturn.

What happens when a high-flying, high-tech company suffers a comeuppance and has to work much smarter? At Cisco, three business units joined forces to keep information flowing and strategic skills sharp in preparation for the upturn. Their identities may surprise you.

After 44 consecutive quarters of earnings growth, Cisco Systems stumbled badly during the 2001 economic downturn that swept many high-techs off the map. Excess inventory had to be written off the books to the tune of US\$2.2 billion. As the business world and Cisco's shareholders looked on in painful disbelief, the company's valuation fell by \$430 billion and Cisco laid off more than 4000 employees in the first-ever check to 10 years of spectacular growth.

By Patricia A. Galagan



But after taking many steps that are common following a financial debacle, the company did something remarkably different from the norm: It didn't cut back on its commitment to employee learning. In fact, with the full participation of CEO John Chambers, e-learning became a major force for recovery, for forging strong ties with IT, and for demonstrating real business results.

"Our culture has been one of driving e-systems across the whole company even more aggressively during the industry slowdown than we would have during normal times," says Chambers.

It didn't hurt that the charismatic CEO and champion of All Things Internet was already an e-learning advocate. As Chambers is the first to admit, e-learning, fully loaded with rich media and locked into a companywide computer infrastructure, is a bandwidth hog, and that's good for Cisco. The more such learning that companies deploy, the more demand there will be for the converged voice, video, and data network products that Cisco sees as one of its next growth markets.

Cisco believes that the future of the Internet is represented by AVVID: Cisco's Architecture for Voice, Video and Integrated Data—an architecture that supports convergence of voice, video, and data (telephone, television, and computer) networks into one common network. One example of that convergence is IP telephony, which allows users to avoid the tolls of the public telephone networks. It makes sense that Cisco would showcase what could be a major driver of this convergence: e-learning. In addition, Chambers believes strongly that the Internet and education are the two great equalizers in contemporary life and has long directed Cisco to support their use for the common good.

Getting its groove back

In the past 10 months, the delta force—made up of Chambers, the IT unit, and the Internet Learning Solutions Group—has taken full advantage of Cisco's superb networking capabilities to beam a steady stream of information and learning opportunities to staff and partners around the globe. Distinctions between information and learning have dissolved as

the company focuses on providing whatever it takes to get its groove back.

Almost a year before the hard times began, the Internet Learning Solutions Group, led by VP Tom Kelly, had launched learning portals for two key groups: the 40 partner companies that sell Cisco products and services and the 4000 systems engineers who implement the products after the sale. That was the first consolidated e-learning at Cisco, and it beefed up the number of tools and technologies available for the spread of learning throughout the company.

"We've continued to expand beyond the training space," says Kelly. "The thing that has changed the most is that the e-learning tools and technologies are the way John [as everyone calls Chambers] and the rest of the executives interact, communicate, and inform."

Within weeks of the company's slump, the Internet Learning Solutions Group and its IT partners were producing 400 videos a month, covering 45 live events each month over Cisco TV, and helping subject experts create more than 25,000 reusable learning objects. Kelly credits the economic downdraft—in the industry and at Cisco—with turning many e-learning doubters into users.

"During those tough times that were full of uncertainty, John made two or three videos per week for employees about where things were headed. As you might imagine, viewership was very high," says Kelly. "That was the tipping point when executives and employees got the importance of e-learning tools and technologies as part of the company culture. People realized you could reach the whole company at once with the same message and that it could remain available for access on demand."

For the rest of the fiscal year 2001, the use of e-learning tools and technologies accelerated an astonishing 700 percent per quarter—more online meetings, more use of video-on-demand, more log-ons to the learning portals, more online competency testing, more of just about everything that the ILSG and its IT partners had ready for use.

"I think that without the three key elements—a senior executive, a learning component, and IT—working together, you're lost," says Kelly. "Leave e-learning alone in the training organization and you'll remain a cost center that has trouble justifying itself. We bond with the IT organization to decide which tools and which infrastructure to use, and

IT'S THE RESULTS

John Chambers, the CEO of Cisco, is under a microscope. How is he leading his company after its first major misstep? What does he have to say *now* about e-learning as the Internet's "next killer app"? Are e-learning and recovery related? **We ask; he answers.**

Q Your company has been through some tough times recently and unlike most companies that cut training in tough times, you've embraced it even more than in the past. What's your business rationale for that?

A The rationale is threefold. First, I really do believe in the productivity and customer satisfaction that will come from the training. The second is Cisco's corporate philosophy that we make changes during transitions—be they economic or product transitions—and we prepare ourselves for the next segment of growth. If we make fundamental changes now when things are going slower, we position ourselves for the future. Then when the uptake comes, those changes flow through in better customer satisfaction, better-trained individuals, better retention, or better productivity.

So, our culture has been one of driving e-systems (including e-learning) across the whole company even more aggressively during the industry slowdown than we would've during normal times.

The third point I want to make is very important for the sake of complete and fair disclosure. We have a tremendous interest in this category (e-learning) not just because it's important to us productivity-wise and customer satisfaction-wise. If we do it well and our customers begin to really do it well and get productivity from it, they'll spend a lot of money with Cisco. E-learning is going to require people to redo their networks. So, I love it because it's a bandwidth hog.

Q You're famous for your prediction that e-learning would be the next killer app. You made that statement about two years ago. Do you still believe that, and how far along the road do you think we are?

A E-learning was always like e-commerce to the consumer: It was always two years away, so I never pushed it at all. It was only once we began to see the productivity increases and the increased customer satisfaction in our salesforce that I got really excited about it. We just got rated the best-trained salesforce in the world by *Sales & Marketing Management* magazine. That's a tremendous honor.

It's kind of like our e-commerce. We had a beautiful e-commerce site eight years ago; nobody came. Only when we changed the process for interfacing with our customers did we really get going with it. We did a third of the world's e-commerce and had about 95 percent of our orders coming in over the Internet. Seven years

ago, we said e-commerce wouldn't be business-to-consumer but that the primary users would be business-to-business, and that was right.

When we first started e-learning, productivity probably decreased even though we had cost-savings on transportation and more effective use of facilities. What we did first was to automate individual instructor-led training, and that wasn't the way. I thought that our salesforce and our company as a whole would love to listen to the CEO talk for an hour or two, but I was wrong. E-learning sessions now average only 12 minutes. After 15 minutes, attention drops off. That required changing the whole principle.

I thought that people would take a 40-hour course online and then they'd pass the test. Well, it was the reverse, and I should have seen that coming. People take the test first to figure out what they don't know and take the modules only when they need to be able to pass the test. If they pass it outright, why take the course?

So, e-learning really changes the fundamental learning process. And by the way, that's what systems do. If you just automate what you've already got, you don't get much productivity. It's how you change basic underlying processes that gains productivity.

Q How important is it to you to measure the results of learning?

A It's very important for a number of reasons. I really believe in e-systems. Also, I believe that learning and the Internet are the equalizers in life, both for our company and for the world. The combination of the two gives people a chance to participate in the second industrial revolution in a way they didn't in the first. It isn't a pure solution for everyone, but it has a much higher probability of getting a much wider percentage of our population involved on a global basis.

Last, I'm able to get other groups inside and outside the company to follow our lead if we're able to show true results. I'm not talking about marketing results; I'm talking about what you actually get in payback. Show me the meat. Show me that you rolled out an ISO 9000 certification for US\$16,000 in five weeks that would've taken you three months and cost about \$1.5 million. It's those types of results that allow me to get comfortable with pushing applications to other functional groups, and sharing those with our customers and encouraging them to do it.

“Production values are important because we’ve seen a direct relation between the quality of the streams and their acceptance and usage.”

—Mike Mitchell, manager,
Cisco Media Network

John determines how the company will interact and communicate. Together we stay focused on what’s possible and why we should be doing this.”

Operating in these circles, says Kelly, “means you will have to show some hard results.” To help demonstrate business impact, the ILSG measured satisfaction, usage, and cost- and time-savings among the company’s 40,000 reseller partners. “We asked, ‘Has your satisfaction with Cisco increased because of using these (learning) tools and the frequency with which you have access to Cisco through this portal? Have your sales increased? Can you document that your training costs are going down? Have you met your customer needs better because of access to learning?’”

Three quarters or more of the respondents said “yes” to each of those questions. The more that resellers used the site, the more likely they were to return. Ninety percent of the respondents said they’d recommend the site to their colleagues.

When the economic crunch hit Cisco, all units had to shed employees and cut or postpone spending on things that were not deemed strategically essential. E-learning tools and technologies survived two rounds of budget cuts due to Chambers’s growing use of them and to the way they showcase the company’s IP technology, but also because e-learning had been racking up results. Cost-savings, increased reach and access, performance improvements, and productivity increases could all be traced to e-learning.

Richer is better

One project that was spared was a planned \$10 million investment in the Cisco Media Network, including the construction of a \$7 million studio complex for creating and transmitting rich (bandwidth-heavy) media. In the year prior to the studio’s opening, using video for learning and communications saved Cisco \$115 million in expenses. Now with the studio in place, production costs are lower and Cisco expects to see even greater savings.

The Cisco Media Network is a large private broadcasting network linked via satellite and IP technology to a worldwide grid of servers. The unit, managed by Mike Mitchell, handles the processes, standards, tools, and infrastructure for delivering rich media for Cisco, internally and externally. The network serves about 100,000 users. Content comes from 40 business units, 11 technology groups, and three product-marketing groups. The network broadcasts such items as the company’s annual meeting, video briefings by key executives, learning portals for various audiences, and local transmissions within business units.

Cisco started building out the live IP infrastructure in 1997 and switched to full IP in 1999. “We can roll a mobile cart into an office or meeting room, plug into an Ethernet jack in the wall, attach a camera, and start doing a live broadcast,” says Mitchell.

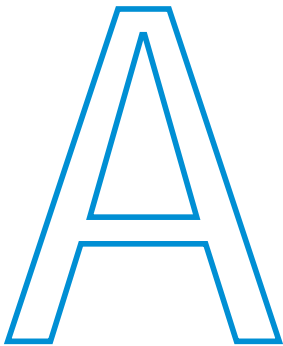
“The advantage of IPTV is that the company can multicast high-quality material over its intranet. Multicasting takes up the same amount of bandwidth no matter how many people are watching.” They have what they call An All-Hands meeting layered with sound, images, and movie-like editing, streaming at one megabit per second.

“Production values are important because we’ve seen a direct relation between the quality of the streams and their acceptance and usage,” says Mitchell. “When we were streaming at 100K, we didn’t see much acceptance. Once we could scale high-quality material, rich media began to look like a legitimate replacement for instructor-led training and meetings.”

The network transmits about 50 broadcasts a month and will soon do 80. Users view them individually on PCs or laptops, in groups such as business units, or in large crowds at major events.

“It’s not about which is better—classroom or e-learning,” says Kelly. “It’s about which is more effective. The one that’s more effective is the one people will use.” He cites the *Account Manager Learning Environment*, a tool that substitutes e-learning on

demand for hours in the classroom. “The account managers love these tools,” says Kelly. “They’ve formed groups to study for and pass the tests and work out solutions together. Some people might call that cheating, but that’s real interactive learning.”



MLE is based on sales scenarios that emphasize how to sell particular products. “The product and technology information can be acquired in lots of ways,” says Kelly, “but weaving that into how to sell the product to various audiences has been very successful. We’re saying good-bye to the four-legged sales call,” he says, referring to the fact that account managers who’ve mastered AMLE scenarios can make sales calls without as much support from a systems engineer.

The Cisco Media Network also puts low-end media such as audio, simple video, and PowerPoint slides within easy reach. A host of desktop video stations—a camera, a microphone, two lights, and a computer—are deployed around the company.

“One of the biggest changes we’ve seen over the past year,” says Mitchell, “is that people have moved from the WOW reaction (*isn’t this neat!*) to regarding these tools as part of the culture. Opening up your viewer to see what’s going on or to take a class is part of daily practice.” In some parts of the company, e-learning accounts for 80 to 90 percent of the time employees spend learning. Two years ago, classroom training predominated.

“The amazing thing about IP streaming is that once you get it deployed, it can be cheaper to do a live video broadcast than a conference call,” says Mitchell. Before IP streaming, Cisco would fly people to a facility in Dallas that broadcast to 50 downlink sites around the world. At the receiving end, Cisco employees would drive to one of those 50 sites to see the broadcast. Each session cost about \$200,000. With full IP, costs went down to \$20,000 per broadcast, mainly for production quality. “The use of the medium has taken off and now with our own studio we’re gradually reducing the cost to about \$2000 per session for the same high-production quality broadcast,” says Mitchell.

“Our mode of operation for these media is distrib-

uted development and centralized distribution,” he explains. “That means that anyone can produce content using tools and standards we’ve provided.” The developed material goes through a central publishing point, where software asks for metadata about the material to make it retrievable by a search engine. So, for example, a product manager publishes a product update, perhaps as a video-on-demand or VOD (rhymes with *good*) and announces the update on the learning portal for account managers. A salesperson might then use a locator tool to pick up that VOD and anything else about the product that has been published since he or she last searched for updates.

With authorization, a content developer can publish something outside the company firewall with the click of a button. Standards ensure the quality of the content and the ability of components to work together in Cisco’s complex network of computers, routers, servers, and satellites, but getting there hasn’t been easy.

The road to open architecture

Cisco’s head start in e-learning has helped make it a natural leader of the industry. With its strong IT infrastructure and insistence on technical standards, Cisco has also turned out to be a proving ground for many of the e-learning suppliers with which it does business.

Because ILSG uses products from several dozen e-learning suppliers—everything from learning management systems to authoring tools—interoperability is a major concern. “Companies like Cisco usually fix those problems themselves,” explains Kelly. “But we’re trying to drive change in the industry by encouraging the suppliers we work with to see beyond their proprietary vision and understand what open architecture really is.”

Cisco has a database of about 300 suppliers that have been evaluated for their ability to work within the Cisco firewall. Some are CDN (content delivery network)-compliant, and some are formally registered as part of the Cisco E-Learning Ecosystem. “Even if we don’t use them, we’ve given them scrutiny and know they can do what they claim they can do,” says Kelly.

“Ideally,” Kelly continues, “we’d like to see something like our ecosystem applied to the whole industry to get it to settle on some enforceable and meaningful standards. We want interoperability to stop being a problem. In the meantime, we use our requirements to influence the development of the products we purchase. If suppliers are smart about

“It’s ironic.
Suppliers work hard to assemble
‘complete solutions’; we often
prefer to unbundle.”

—Rick Crowley, director of e-learning
systems and architecture

this, they have something to take to their next client.”

Dealing with thorny interoperability issues is also part of Rick Crowley’s job. As director of e-learning systems and architecture for the e-learning group, he’s concerned with integrating suppliers’ software into the Cisco architecture. “It’s ironic that suppliers work so hard to assemble ‘complete solutions,’ because the truth is we often prefer to unbundle their strong products from the ones they’ve acquired just to fill gaps.”

Crowley’s job is also to care about customer requirements. Deeply. He’s the Supreme Court of user requirements, consolidating and prioritizing them to make sure that the systems can actually deliver what customers want. He’s more conservative than liberal when it comes to his judgments, often preferring a solution that will take longer to build but will benefit the company as a whole.

“This feels like pioneering work,” he says.

Crowley has a model and a process for this daunting task. There can be hundreds of competing and conflicting application requirements and dozens of access points to the systems—and all of it operating in a network infrastructure that makes MSNBC look simple by comparison. Go to <http://www.cisco.com/warp/public/10/wwwtraining/elearning/implement/guides.html> to view the model, the full list of application requirements, and the white paper “Blueprint for Enterprise E-Learning.”

Requirements for the application platform fall into four boxes representing different services the architecture must perform: content management, delivery management, learning management, and business operations. Having someone think this hard about what Crowley calls “the necessary evils behind the scenes” means that when users log on, the system

invisibly helps them go where they should go, see what they should see, and leave satisfied.

The partnership’s the thing

Brad Boston, CIO at Cisco, characterizes the relationship between IT and the Internet Learning Solutions Group as unusual for several reasons.

“First, Cisco views investment in technology as a key differentiator rather than as a cost center. We employ a client-funded model for most IT activities. Equally, we partner together to implement the applications and architecture to meet the business needs as defined by the Internet Learning Solutions Group.

“Secondly, John Chambers made e-learning a mandate within Cisco, so both IT and ILSG have had to rely on each other to achieve success while collaborating across many other groups within the company. I’d say we have more of a partnership than a simple working relationship. We share the rewards and recognition of successes, and we are there together with our sleeves rolled up to work out issues when they arise.”

Their close partnership might be considered unique compared to practices at other companies or in the IT industry. Boston explains, “Cisco has a very Internet-centric culture, so partnering was easy for us. The ILSG management team understood from the beginning that it needed to collaborate with IT to achieve a successful company-

wide solution. For example, our channel partners require technical readiness. As a result, we built a learning solution portal for them—a group of 40,000 channel partner companies with a combined technical and sales staff of more than 400,000 individuals.

“Together, we worked out a technical solution that included such areas as network security, tracking and reporting individual learning, a shared registration system, a shared catalog, and single-sourced learning content management. From my perspective, it has been a great success,” says Boston.

At Cisco, deployment of e-learning has been driven by the need to solve business problems, according to Boston. “For example, with the economic downturn, there was a need to have a more cost-effective way to deliver live classroom-like experiences quickly to a global sales team without the expense of travel-



Before, we were involved because we thought it was the right thing to do. Now, having seen the results, we're committed. Committed in a big way.

Q You measure money and time. Is there anything else that's important to you?

A Customer satisfaction. I measure customer satisfaction every which-way it moves. One of the things I was most excited about last year was when our total customer-satisfaction again dramatically improved on internal and external surveys. We're number 1 in customer satisfaction in most major surveys across the computer industry.

Q In conversations with other people at Cisco, there were some consistent themes. One of them is the merger between learning as it's traditionally defined and information as used in this company to reach employees and get out key messages. What led to marrying learning and information?

A We've always believed in the development of people. There was just no effective way to do it. It was very labor intensive. Taking people out of their normal jobs for a week or two was really not effective. So, what really changed was we saw the business results.

I'm very easy. If you show me the business results, then I spend the money. If you can't show me the business results, then I don't—no matter how important it is to me. I'll try new ideas, and I'll dictate e-learning through the company. But I'm not going to make a major commitment to our customers or the next major commitment to spend money until I see the results.

Q In theory, someone would have had to take some risks to get the results to show you.

A That was me. I basically dictated e-learning across the whole company, knowing that there would be some problems. When we changed to e-learning, we saved some money, but we didn't get productivity out of it at first. I did that because I really believed in learning and because I knew how important it was to the customers. But what allowed me to take the second step, and I'm pretty good at stopping things that don't get results, were the results. You've heard the difference between being committed and being involved? Before, we were involved because we thought it was the right thing to do. Now, having seen the results, we're committed. Committed in a big way.

Q Your attitude and the company's attitude about learning really puts you out ahead of most organizations. Do you have any thoughts about why other companies are slow or reluctant to go down this path?

A It's really very simple. They haven't seen the business results. One reason Cisco got started early is that we were one of the earliest users of technology. We did a third of the world's e-commerce seven years ago. We were the ones that did the first virtual close from the (electronic) financial system. We do the vast majority of our customer support over the Internet with high customer satisfaction and dramatically lower costs and the highest profit margin in the industry. So, we're often on the leading, bleeding edge of how you do things.

We also do it, as I said before, for a reason that is very selfish to our company. If we do this well and we can teach others how to do it, they'll spend more money with us. So I think it's right, but it's also just plain good business.

Q Do you think e-learning has had a human impact on employees?

A Absolutely, in many ways. When a company shows a tremendous interest in its employees and their development, that increases retention and helps build the culture. At our company, we not only know every critical situation going on in the world every night, but we also try to know every situation in which an employee is facing a critical family or personal problem. It is that unique approach to our culture that makes Cisco one of the best places to work even during very difficult times, which this past year truly was. And e-learning is just one more example of trying to show that we want you here three, five, and 10 years from now, that we're investing in your future, and that we're challenging and motivating you. We all understand that if you don't continue to learn, you're going to get left behind, either as an individual or as a company.

Q What about your own learning?

A I'm constantly learning, but I don't publish the results of my testing because I don't want to discourage other people with my grades being so good, you understand. (Big laugh.) I'm constantly learning and trying different formats. Often, people will show me the new e-learning modules.

Q When do you find the time?

A I have a unique advantage. Very often when I travel, I can have staff travel with me, and their reward or penalty is to teach me topics as we go. And so I use a combination of ways to learn. I often use e-learning in my demos as well. I think the leader has to walk the talk.



ing. The sales organization and ILSG together funded an IT project, with a dedicated IT team, to implement a virtual, online classroom using IPTV and CDN technology. It reaches 9000 salespeople worldwide with more than 100 broadcast videos and more than 1000 online classes per quarter.”

Bill Souders, IT director and head of global e-learning technologies, agrees that the partnership between IT and the Internet learning group is especially tight. He says:

“This helps avoid a classic bad scene as when learning specialists create something that meets a business need and can’t be implemented technically or IT people build something that’s technically sound but pedagogically inadequate. Partnership is key because there are so many unknowns. We’re not automating a well-understood process. It’s rational experimentation.”

Looking ahead, Souders wants to see technology enable learning that’s “navigable, personalized, and prescriptive” and feels Cisco is on the threshold of doing that. The challenge is to deliver the right knowledge to the right people at the right time. “For example,” he says, “everything about products, competition, logistics, finance, acquisitions—you name it—is targeted at the salesforce. So, how do you prevent overload?”

The answer is personalization—a feat that lies at the heart of what could set e-learning apart from classroom learning. More intense personalization of learning is about a year away, say the people working to make it happen at Cisco. Prescriptive assignments, with homepage alerts, are in the works, as well as the ability to test out of some courses and to specify preferred learning formats. Personalization will be enriched by tools for learning how to learn and by cerebral networks that will know, with little input, what a learner wants.

One step toward personalized learning is a program called *My Learning*, which sets up learning roadmaps for account managers, systems engineers, customer advocacy staff, and new employees. Here, managers can assign learning or learners may select their own. *My Learning* keeps track of test results and assessments and will soon be able to alert employees and their managers when a learning assignment is overdue. Learning can be delivered in any of six formats, including live and online. Megan Wolfenden, manager of the Field E-Learning Connection portal where *My Learning* runs, reports that managers have made more than 11,000 learning assignments over the past year.

Souders explains the difference between personalized and prescriptive learning. “We have learning maps for specific roles. We have search-and-browse capability using metadata-tagging of learning objects. We know what your management wants you to be competent in. We know where you work, who your clients are, and what learning you’ve already mastered. That information allows us to present a personalized view of learning opportunities. Imagine the time when the system also knows that you have a customer meeting coming up on wireless delivery and you haven’t taken the wireless class, so we offer you a 10-minute vignette just before the meeting. That’s a prescriptive solution.”

Souders warns that one consequence of automating learning is that the supporting technology can generate quantities of data about how people use the tools. Though click-stream data is useful for making business decisions and personalizing learning maps, Souders wonders how much visibility is too much. “Because we can track clicks doesn’t mean we need to keep track of everything everybody does. It’s useful to know that most people abandon a certain video after three minutes, but it may not be necessary to know which people. On the flip side, a manager might want to know who has mastery of certain skills and who’s qualified to do certain work, such as calling on a challenging prospect.”

Life on the edge

If e-learning can deliver such finely tuned help, cut costs dramatically, and serve key corporate goals, why are companies hanging back?

“This is a young industry,” says Souders. “There is no perfect application. People are often overwhelmed by the complexity of what’s offered and what’s possible, but I believe the best approach is to just start and do some rational experimentation.”

Kelly adds, “I think some companies try it and experience disappointment because they lock into a training perspective. Though training can be the driver, you need a broader vision. We encountered that problem here. We said, ‘e-learning,’ and some people replied, ‘We don’t want to talk about courses.’ We said, ‘This isn’t about courses.’ Then they began to get it.

“John Chambers was the exception right from the start. He has always agreed with the definition of e-learning being broader than training, and he has supported that by increasing his use of the systems, tools, and technologies ever since we started down this path



We're just taking baby steps with our live chats and virtual labs, but one day we'll be able to do a truly virtual classroom on a global basis.

Q The importance of standards, mostly about technical interoperability, are a big concern to Cisco's IT and e-learning groups. They believe the industry needs standards to thrive. Are you pro-standards, neutral on standards, anti-standards?

A I'm very pro-standards as long as they're not proprietary or lock out innovation. I believe in empowerment, so originally I was someone who said don't put standards in place. But you just can't get efficiency unless you do that. So, I want common standards on data architecture and common standards on which software we select, just like we have common standards for acquiring companies. The only two things that are nonnegotiable are that the Cisco culture survives and that our systems survive.

Q You said that standards can inhibit innovation. Do you think the e-learning industry is at a place where the time for innovation is over?

A In the beginning (of the computer industry), standards inhibited innovation because they kept the central mainframe groups and the IT groups from moving fast enough. The distributed process and the PC were both the result of moving power closer to the users and allowing them to do whatever they wanted. But the productivity from that came primarily in your own silo, in your own job. To get real productivity, as many people are learning, you must get consistency across a whole functional group, maybe manufacturing or sales, or across the whole company. That's where real leverage comes in.

Let me use an example: I can't use a different manufacturing system in each of my 34 plants. They all have to use the one that will accommodate our architecture or we won't get efficiencies. The same thing is true of e-learning. It's as basic as that.

Q So for you, e-learning is a business tool?

A It's not just a business tool; it's a huge productivity and competitive advantage—if we do it right.

Q What do you think is next in e-learning?

A I think there's going to be a fundamental change in how businesses and schools deliver e-learning. I think it gives you the flexibility to bring your audience along at different speeds based on their skill sets. It also allows you to become, as an instructor, a knowledge broker and to bring the knowledge of the whole Internet

to your classroom and to your group. I think it will change teaching fundamentally and dramatically for the better in ways that people are just beginning to understand. But I don't underestimate some of the challenges. Anytime you make change, there's a lot of resistance, and the ones who resist it the most are often the ones who were most successful in the prior arena.

I think the development after that will be the true virtual classroom. We're just taking baby steps with our live chats and virtual labs, but one day we'll be able to do a truly virtual classroom on a global basis.

Q You talk about the importance of learning with the passion of an educator. Is there anything in your background to account for that?

A I'm going to teach when I retire so I really believe in education. But the real motivator for me is my parents. I saw in my family the results of a strong education. Both of my parents are doctors. They taught me from the beginning that education is the equalizer in life. When you add the Internet, that makes education even more powerful. And so I'm passionate about education.

And I do believe that education and the Internet have a chance to level the playing field in a way that has never been done before, not just in the United States, but on a global basis. Put a different way, if America doesn't get its act together in education and training its young people and retraining the existing workforce, a substantial part of the country will be left behind—not 5 or 10 percent but perhaps 30 or 40 percent. So, it's ethically the right thing to do, and I think it's the equalizer both in the United States and globally. One of the unique things about e-learning is that it puts everyone on an equal footing. Nobody sees whether you are old or young, male or female, blue-eyed or brown. They just see results. That's how I'd like life to be.

Q Is there anything else you want to say that we didn't cover?

A I think e-learning has just moved from something that was an experiment—a very healthy experiment three or four years ago—to main line. I think we're at the very early stages of really understanding the power it has. It's no longer a question of whether it will be effective or how much it can increase productivity; it's just a question of degree. **TD**

four years ago.”

Chambers himself says the answer is very simple: “Companies that haven’t started haven’t seen the business results.”

Cisco’s crisis has pushed corporate learning another step toward being a true strategic business tool. During the past 12 months, any formal distinction that once existed between learning and communication has blurred to insignificance. People who predicted the disappearance of *e* from *e-learning* can see it happening at Cisco. With implementation muscle from the IT side and strong support from company executives, learning is a new delta force inside Cisco.

Tom Kelly summarizes: “We hold learners accountable for what they learn, developers accountable for what they create, and media accountable for their choices. That is why e-learning has moved from the classroom to the boardroom at Cisco. We’ve proved that it’s a strategic tool. There’s no moss growing here.”

Cisco is far enough ahead of the e-learning pack that other companies seek its counsel. The company has taken the first steps, through its Internet Business Solutions Group and its Customer Advocacy Group, to “apply more expertise to its services business,” including

Partnership is key.

We’re not automating a
well-understood process.

It’s rational experimentation.”

—Bill Souders, IT director and head of
global e-learning technologies

e-learning. “We think our triangular model works very well,” says Kelly, “and if we share it with others who want to go down the e-learning path, we think they’ll find the balance to be successful.” Time will tell. TD

Patricia A. Galagan is the general manager of Content and Publications for ASTD; pgalagan@astd.org.