Simulations provide a whole new world of training opportunities

The average age of sales associates at Secaucus, N.J.-based kids’ clothier The Children’s Place is early 20s, says director of training and development Leslie McCleary, so when it came time to teach them best practices in safety and loss prevention, simulation technology seemed only natural. With such dry subject matter, the company needed something associates in its 880 stores would find interesting enough to pay attention to.

“They grew up with computers; they're gamers; they don't know life without a computer,” McCleary says of her company's typical sales associate. “We wanted to make something that would engage them so they would learn these policies and procedures, but in a fun way.” The simulation program Maumee, Ohio-based e-learning provider Root Learning designed for them, piloted in late May and set to launch around August, presents the material in the form of a crime scene investigation. With computers accessible in each retail location, and the ability to stop and start the 11 vignettes as needed, employees can complete training without disrupting their work.

Some vignettes, for instance, cover safety issues such as the proper handling of equipment, including remembering to put potentially dangerous tools back in their respective place. The exercise begins with the ringing of a phone in the middle of the screen. When the associate clicks on it, a recorded facilitator appears, informing him or her through a text-based message that there has been an accident, and the company needs the associate’s help to figure out what happened.

The learner is instructed to read the "case file," which they get to by clicking on an icon on the phone that brings up a folder containing the facts of the situation, including instructions such as to interview fellow workers on what happened or investigate the scene, looking for clues. In one vignette, for example, there has been a safety-related accident.

The simulation allows the associates to take a magnifying glass icon to get a close-up view of the specific elements of the accident scene, while they also can click on icons representing other employees who have information about the problem.

Using the "magnifying glass," they see an Exacto knife left haphazardly on top of cartons on a dolly that has been left out. A ladder, in addition to a couple other pieces of equipment also has been left in the middle of the selling floor. The associate is able to jot down notes within the program after getting information from simulated peers and exploring the scene. From there, learners are given a text-based review of the company's safety standards followed by questions on what happened to cause the accident, and how the associate will prevent such accidents in the future.

The simulation was completely custom-designed by Root, which has created three other (non-simulation) e-learning programs for The Children's Place since 2003. The design process started in September 2005, and took four to six months to complete, which McCleary says is comparable to the other programs the vendor has created for her company. To ensure the system would appeal to learners, the company rounded up a few associates with a fondness for computer games to share likes and dislikes about such programs. Once developed, the simulation was tested with a small associate focus group.

“We wanted to give them an opportunity to feel like they're part of the solution,” McCleary says of the decision to create a simulation for training, “that we're not just feeding them what they need to know, and they're just giving it back to us.”

Keeping your audience in mind is, indeed, key when developing or purchasing the technology, says Clark Aldrich, co-founder of Norwalk, Conn.-based simulation provider SimuLearn.
Branching stories, for example, that function like an electronic form of the old "Choose Your Own Adventure" books, in which users are given a journey or challenge with choices they must make to determine the outcome, are helpful when working with unenthusiastic learners.

They'll come to forks in the road, such as deciding whether or not to do certain tasks, and will be led to a different page in the simulation depending on which option they choose. "They're really good for reluctant learners and places with high turnover," Aldrich says. "They're really, really bad for high potential or highly creative people, who resent like crazy having to make these forced decisions."

While the engaging media of these systems, such as high-quality video, may be just the thing to lure in new bank tellers and discount chain employees, or update the skills of call center reps, they might not be fulfilling for an up-and-coming corporate executive or advertising design wunderkind used to the-sky's-the-limit thinking.

What Aldrich calls "interactive spreadsheet" simulations, on the other hand, are more suited to high achievers. These programs feature competing individuals or teams who start out with a set amount of simulated resources, such as a specific amount of money or real estate holdings. From these starting blocks, players must tackle a challenge like growing a business or winning market share.

Though capable of being played thoroughly online, Aldrich says the game is usually led by a facilitator who meets with players to help guide them through the process, by, for instance, discussing with them possible next moves or team dynamics. "The output of these kinds of models tend to be graphs and charts, which are really wonky," he notes. "It takes a special kind of person to get really excited about having something go up or down by three or five percent, but it's much more realistic in terms of how a CEO thinks about their own organization."

You might want to even consider whether your learners are more introverted or extroverted, says Sivasailam Thiagarajan, president and "resident mad scientist" of Bloomington, Ind.-based simulation and gaming workshop provider The Thiagi Group. For instance, while salespeople might enjoy simulation-based training delivered in a synchronous, competitive fashion, such as the "interactive spreadsheet" model Aldrich cites, accountants may prefer a simulation they can do on their own, maybe even one that allows them to compete with the computer rather than with another individual.

"The same simulation can be made to appeal to different types of learning styles," he explains. Thiagarajan says the same online role simulation game can be used on a group or individual basis. "We can create a simulation where I, the single player, have to react, analyze, interpret and respond to whatever the others players are choosing to do," he points out, "and the other players could be live players or it could be a set of pre-arranged, pre-programmed inputs inside the computer."

A blended approach

As powerful a learning medium as simulation is, combining it with more traditional methodology will make it that much more effective. At The Children's Place, for instance, after each simulation vignette is completed, the associate will be expected to print out the exercise and review it with a "learning partner," an in-store manager or peer, who will ask the associate to demonstrate in the physical world that he or she understands the concepts presented in the simulation, McCleary says.

They might, for instance, have to show the proper way to put away dangerous items, or the learning partner might ask the associate questions about a policy on shoplifting or safety, which the learner has been instructed to print out from the exercise.
The blended approach, in which simulation-based training includes physical world practice when necessary, is essential, says Vincent Thomasino, vice president of simulation and training for Somerset, N.J.-based integrated communications agency and simulation provider D2 Creative. Some skills, such as the safe way to lift heavy boxes, or how an emergency worker dressed in bulky protective gear must maneuver his fingers inside thick rubber gloves to operate a technical device, require real-world practice, Thomasino says. Strictly doing such tasks virtually may result in what Thomasino refers to as "negative training," or what occurs when an employee is led to believe a skill is easier than it really is because he has only "done it" by pushing buttons on his computer. D2 was faced with just such a challenge when it designed a fully immersive simulation for emergency workers training to conduct rescues following a terrorist attack.

"When you're inside these suits with those thick rubber gloves, one of the huge challenges is understanding how to manipulate all the devices you use to do evidence collection," he says. "Those were things that just did not translate to this medium very well, so instead of wasting a lot of time trying to recreate that, we ignored it completely," Thomasino explains, "and we established as part of our blended curriculum not only instruction on how to use those devices, but little stations whereby they could go and practice those skills individually, and master them before they got to simulation." The physical requirements of what trainees would be expected to do understood, simulation, he says, could place more emphasis on skills like team building.

Ventilator manufacturer Newport Medical Instruments in Costa Mesa, Calif., had Philadelphia-based simulation provider Equipment Simulations create three interactive virtual representations of its products for customers to train on that also includes three instructional videos. But the company doesn't underestimate the need for hands-on practice, says director of clinical education Cyndy Miller.

"This is not a standalone training; it's a training aid," she stresses. "No one is expected to use a piece of life-support equipment on a patient after only practicing with an electronic simulation." Trainees should spend time with a person who can serve as a live instructor, she notes, as well as study an in-depth operation manual Newport provides. The company also makes use of the simulation at live training sessions in which the traditional classroom setting is given a boost by students who follow along with the instructor using their interactive virtual ventilators.

Some companies, like Somerset, N.J.-based outsourced pharmaceutical sales, marketing and compliance solutions provider inVentiv Commercial Services, go a step further, making the technology just one part of a physical simulation. The company uses DialogCoach, a scenario-based sales and call center rep simulation from Coopersburg, Pa.-based training software provider ASERT, to complement physically-based role-playing.

The training, which seeks to replicate a day in the life a pharmaceutical sales rep, physically simulates the office or hospital environment these workers make their calls in, says vice president of training and development Peter Marchesini. Mock offices are erected in a ballroom with overhead announcements prompting participants through the process, explains Bryan Horveath, executive director, professional development group. Students come into the "meeting" with everything they would typically bring on a call, including promotional materials and background information on the organization.

Pitches are made to live individuals, including actual physicians and other inVentiv employees such as district managers, playing the customer role. " 'Role-play' is an overused term," Marchesini says. "This is as close to 'real play' as we can get for them prior to sending them out, when they're actually dealing with live customers."

The software component of inVentiv's simulation program, Dialog Coach, is used as an ongoing training tool that reps access whenever they, or their managers, feel extra practice is necessary. It consists of a series of online, videotaped scenarios with voice-activated microphone, Horveath says. A simulated talking, moving physician in the upper right hand corner of the screen appears,
which the rep must have a sales conversation with using their headset microphone. Reps are
given immediate feedback on how they're doing. "If you say the right words, you're able to move
on in the call," Marchesini says. "If you're going totally down the wrong way, it'll end the call."

Schneider National, a transportation and transportation-related services company in Green Bay,
Wisc., also believes the blended approach is key when using simulations in training. While it has
three varieties of truck simulators, including one full-scale model of a truck with motion capacity,
live instruction is intertwined throughout.

In addition to the presence of an instructor beside students in the simulators, trainees spend two
to three weeks on the road with a living, breathing teacher along for the ride. Simulations allow
the company to train drivers for such hazards as adverse weather conditions and emergencies
such as tire blowouts, but are far from a panacea, says Don Osterberg, vice president of safety
and driver training.

"Simulation-based training is certainly effective, but it's not a replacement for instructor-led
training. The over-the-road component of training with a certified instructor remains critically
important, and the technology isn’t going to replace that."

Vetting vendors

Like any e-learning technology, all your grand simulation plans will be laid to waste without the
right partner to sell you what you need. Once you’re sure of who your audience is, what their
learning needs are and what mix of technology and classroom-based coursework is necessary to
achieve your goals, you can start the vendor selection process.

When you get down to the contenders that seem worth scheduling time to speak with, start with a
10-minute conversation on the project you’re considering, says Michael Bean, president of San
Francisco-based simulation provider Forio Business Simulations. High points to touch on include
the obvious, such as the type of learning material you need to cover and audience characteristics
to the perhaps not-so-obvious such as number of learners the system will need to serve, and for
how long these pupils will be using it. "And also blue sky things, ideas you have about the
simulation that you think would be neat, but you don't absolutely have to have in there," Bean
says.

If you're still interested, ask the vendor to then show you demos of three projects similar to your
own, with emphasis on "similar." In the case of simulations that doesn't mean roughly in the same
category; ideally it should mean the same type of program (i.e. multiplayer competitive strategy-
oriented fare) as well as the same industry you're in. Though less crucial than making sure the
vendor has familiarity with developing the kind of program you have in mind, it might make the
process a little easier if they've worked with others in your field, Bean says. "If you're building a
marketing simulation, and your vendor doesn't have any marketing simulations to show you," he
notes, "then that is probably a red flag."

As eager salespeople flash their technologically advanced wares your way, don't get deterred
from your mission, says Adam Nelson, vice president of product development for San Francisco-
based simulation provider Ninth House.

"A big mistake is putting form before function," he says, adding many are drawn to the bells and
whistles products have. "It's not clearly analyzing what it is you want to get out of it and pairing
the solution with it." To sidestep this pitfall, Nelson advises self-discipline and not to be shy about
asking the vendor the questions that will keep you on track. "The primary driver should always be,
'What effect is it [the simulation] going to have on my business and how am I going to measure
that?' Ask them for past information, and compare it against what is you want to achieve," he
says of asking vendors about their record of creating the kind of simulation you want.
Thinking about the vendor’s potential to serve as a long-term partner is also important. Malvern, Pa.-based business equipment and supplies provider Ikon Office Solutions, for example, has signed on with Scottsdale, Ariz.-based e-learning vendor NETg for the creation of a new scenario-based simulation program that will most likely launch by summer’s end. One of the reasons the company chose to work with the vendor, say Inga Swearengin, manager of learning technologies, and Donna Venable, vice president, human resources and shared services, is the good job it did creating other e-learning courses for Ikon in the past. “Working with an existing partner allowed us to take advantage of the knowledge we already had of each other,” Venable says. “If you are able to, identify a vendor that you can build a relationship with.”

**Mission Critical: Feedback**

There’s more to effective learning via simulation than merely having a great time weeding through a complex branching story or beating out co-workers in a virtual free-market bloodbath. Along with the meat of the experience, it is critical to provide employees with a side dish of guided reflection. In fact, says Bjorn Billhardt, CEO of Austin, Texas-based e-learning and simulation provider Enspire Learning, about 70 percent to 80 percent of learning from simulations comes from reflection or feedback from the experience. “You’ve been taken out of your regular work environment, and you’ve been transported into another place where you’ve been pushed out of your comfort zone, and that in itself has some value,” Billhardt says, “but the real value comes in when you reflect on what has happened, and why you’ve reacted in certain ways.” That’s where debriefing comes into play, he emphasizes. “If you have 10-minute simulation chunk that teaches a very concrete concept,” he says, “the best way to debrief that is to give people immediate feedback, and say, ‘Here’s what you did, here’s what you should have done, and here’s what other people did.'”

One smart way to do it, Billhardt says, is to combine the simulation with a 360-feedback evaluation. Live coaching is often made a part of the simulation-based courses Enspire puts together to “draw out some of the learning objectives that the program organizer wants to accomplish.”

In immersive simulations, in which the learner himself is represented by an avatar, or character, feedback can even be communicated virtually. One benefit of providing feedback through characters within the simulation is it can sometimes more closely mirror the kind of social cues indicating success or failure in the real world. If you’re training call center reps, for instance, there may be more effective ways of communicating performance on an online exercise than a simple “Correct!” or "Incorrect!” alert, or even the presentation of an overall score at the end. Instead, you could show your learners they’re doing a shoddy job by having a virtual customer hang up on them, or having said virtual stand-in request to speak to their manager, suggests Dave Fisher, assistant professor of rhetoric and writing at the University of Arkansas at Little Rock. “Most of the products out there worth their salt have some feedback built in,” he emphasizes.

Feedback also takes the form of deciding how far you think your learners should stray from the right answers or procedures before the system puts them back on the proper track. You might want to establish evaluative midpoints in the program in which participants must complete a given task in the correct fashion before being allowed to continue, says Jonathan Kaye, president of Philadelphia-based simulation provider Equipment Simulations. If training nurses to program a medical device, for instance, their progress might be stopped if they seem to be “wondering too much in the interface,” or clicking too many “buttons” in experimentation to figure out the next step to take. “In designing that type of training, you have to decide how far you’re going to let them go. Are you just going to stop them immediately when they don’t do the exact step?” Kaye says.

Along with immediate feedback that your learner has made the wrong choice, the simulation might include media such as video to illustrate what he or she should have done instead, or what the real life consequences would be for doing it incorrectly. A program with such capacity
"assesses and addresses the learner's needs on the fly," says Lyn McCall, chief operating officer of Potomac, Md.-based simulation provider Will Interactive.

A simulation teaching the hazards of alcohol abuse, for example, might have a text block, or even a video, pop up on the dangers of drinking too much for learners who indicated they would order an imprudent number of cocktails, or that they see nothing wrong with slinging back a few before heading to their post as air traffic controller. Their more sage peers, however, who indicated they would never think of doing such a thing, would be able to continue advancing through the simulation without the primer.

**Calculating The Costs**

The knee-jerk instinct of trainers to add features such as customization that skyrocket costs is similar to the habit of adding salt to your dinner before tasting the first forkful of rice, says Clark Aldrich, co-founder of Norwalk, Conn.-based simulation provider SimuLearn.

"Deploy it within a small group of people, and see if it works to your satisfaction because there's no question this stuff works much better if you can find an off-the-shelf version that aligns up 60 percent to 70 percent with your targeted goals," Aldrich says. "It is infinitely more cost effective to do it that way than to either customize an off-the-shelf product or build your own."

With the range on pricing fairly wide for most simulation technologies, that general guideline is essential to remember. In the case of branching stories, for instance, in which the decisions of the learner determine how the simulation plays out, costs for an out-of-the-box option fall "probably in the mid-range of $100 to $200 per named user," Aldrich says, while custom jobs could run you between $200,000 to $300,000 overall.

Simulations that follow what he calls the "interactive spreadsheet model," in which competing learners must decide how to allocate a set amount of resources across "departments" or other "company assets," will likely cost about $500 per person for a three-day facilitated session, he says. Unlike branching stories, and some of the other forms of simulation, this is a technology that typically gets delivered with live coaching recommended, which may make it a little more expensive than other options.

Simulation shoppers may also pay more if they are interested in what Aldrich refers to as "virtual labs" that involve the realistic virtual representation of a technical device such as a heart monitor or part of a car engine, with the ability for learners to use their computer's controls to practice tasks like placing the heart monitor's paddles on the chest of a virtual patient or calibrating the machine. Since these programs almost always require customization, companies seeking to go this route can expect to pay between $100,000 and $300,000.

A less expensive model may be available in the game-based category of simulation, including, for example, electronic versions of games like "Wheel of Fortune," solitaire and "Trivial Pursuit." Useful for tasks such as helping workers review how to comply with certain codes or laws, the idea is to ask questions and present information in the game format, instead of asking employees to simply memorize the stuff. "In some cases, there are a lot of free PowerPoint templates that professors have created over the years," Aldrich says. You can also sometimes "buy software products that automatically format lists of questions into whatever game genre you want." It can be delivered, he says, for as little as $25 to $30 per user.

Erik Ullanderson, manager of certification exam development for San Jose, Calif.-based Cisco Systems, which built a proprietary custom simulation to certify IT workers in Cisco equipment repair, says the technology quickly pays for itself through the benefits a well-designed simulation can reap—especially if your company, like Cisco, has taken the time to make sure the program is "scalable and reusable." "When I speak to other companies interested in simulation, I tell them it
has a high front-end cost, but that it pays off in the long-run," Ullanderson explains. "The return on investment is worth it."

**Their Success Stories**

More than 11 years ago, when Lourdes Puch was still living in Bolivia, things were very different for her. She had attained the highest level of education that country had to offer, and was working as a secretary in the highest echelons of Bolivia’s government. The country’s political instability was starting to look threatening around that time, so Puch decided to head to the U.S. The problem was the computer systems she worked on in Bolivia were outdated compared to what was used here, and, on top of that, document formatting and punctuation in the United States was much different from what she had known.

So, Puch had no choice but to look for work outside the office setting, which required a white lie or two. Then she told prospective employers she used to work for the Bolivian government as a high-level administrative secretary, they inevitably told her she was overqualified. When she began telling them she was just taking care of her parents and looking for a little extra income on the side, and she found herself working as a caretaker for an elderly woman diagnosed with Parkinson’s disease. When the woman Puch was caring for passed away, the family offered to help her make payments on her house as a thank you, which allowed her to enroll in Training Futures. A friend told her about the program, and Puch thought it seemed perfect for her.

Futures is already paying off for Puch, who says she has started designing business tables and signs for two companies—a military newspaper and a real estate company—that she was working part-time for while attending the program, and has expanded her clientele. Puch has a clear plan for her post-Futures life: "I will try to get a full-time job with benefits and more money."

Like Puch, Tania Clavijo started her life in Bolivia, emigrating to the U.S. about 15 years ago. She values the instruction Futures has given her in computer systems, including the use of WordPerfect and Excel, but says her English skills were sorely lacking. Clavijo jokes that the English she learned in school covered little more than how to say “table” and “door.” After taking odd jobs ranging from cashier to supervisor, Clavijo learned about Futures when she was in the hospital after her son’s birth. A social worker who visited her told her about the program. "I've already learned a lot from Training Futures," she says, “office skills and how to work as a team.”

For Najat Ahansal, the journey to Futures began in Morocco where he studied geology and fashion design. "When I came here, I thought I was going find work easily," he says, surprised at how much of a challenge language barriers and lack of computer skills posed. To get by, Ahansal tried working at a restaurant and as a cashier at a grocery store, but he knew he "needed more." Beyond computer proficiency, Futures is educating him about corporate culture, including the way he is expected to dress and treat his co-workers. "It's like some kind of light or door to another world to get me out of struggle," he says of the program, adding his goal is to eventually rise up through the ranks of a corporation.

Bereket Goga, who was working at an Alexandria restaurant while attending Futures, had tried his hand at employment at Marshall’s department store as well as a local bagel shop after emigrating from Ethiopia, but like his peers in the program, he, too, wanted better. Goga says he wanted Futures to hone his language skills so he could attend college successfully and start over. "I want an office job with standard hours so I can go to school at night," he explains. Goga, who learned about the program through a friend’s sister who was a Futures graduate, says he wanted to specialize in information technology.

Wanda Ricks, a New Jersey native, came to Futures after a futile job search. She had moved to Fairfax, Va., seeking a better public school system for her two teen boys, but soon lost her temp agency job. Depressed with nothing to do, Ricks used to visit a county public administration building in Alexandria to pass the time and check out job leads. That’s where she saw a Futures
flyer and decided to apply. "Ironically, I came here to get a better education for my children, but I also got an education for myself," she notes. Ricks had been in the workforce for 10 years but had never picked up the computer skills she needed for long-term job security. In addition to the technical skills she's gained, she says Futures has taught her to better present herself through exercises like the Speaker's Club. More importantly, though, she says the program has given her back a sense of direction. "At least every day I have somewhere to go," Ricks says. "I'm going to school. I look forward to getting up in the morning."

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