September 19, 2008

For Stickier Learning, Try A Dose Of Serious Gaming

by Claire Schooley

For Information & Knowledge Management Professionals

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by Claire Schooley
with Connie Moore, Ted Schadler, and Shelby Catino

EXECUTIVE SUMMARY

When it comes to effective teaching, it's better to engage all of the senses. Interactive learning activities like simulations, immersive learning, and serious gaming put employees in virtual yet authentic situations where they can learn the skills and material while also making decisions and getting immediate feedback on their choices. These immersive learning simulations (ILS) range from expensive flight simulations to simulated leadership-skill-development sessions. Information & knowledge management (I&KM) professionals must custom-develop most immersive learning simulations today, though some learning vendors offer off-the-shelf simulated courses, and some provide simulation authoring tools that allow in-house development.

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NOTES & RESOURCES

Forrester interviewed 21 vendor and user companies. Those whose names we're allowed to list include Adobe Systems, American Research Institute, Bank of America, Cisco Systems, Coalescent Technologies Corporation, East Jefferson General Hospital, Enspire Learning, Federal Reserve Bank of Cleveland, Forterra Systems, Harvard Business Publishing, Hilton Garden Inn Hotels, NexLearn, OutStart, PIXELearning, PlayGen, Qube Learning, SkillSoft, Sprint University, SumTotal, Sun Microsystems, Wharton School, and Virtual Heroes.

Related Research Documents

"It's Time To Take Games Seriously"
August 19, 2008

"Learning From A Community: The eLearning Guild"
June 24, 2008

"Informal Learning Connects With Corporate Training Programs"
August 13, 2007

IMMERSIVE LEARNING SIMULATIONS: A BETTER WAY TO LEARN

The changing workforce and the need to bring employees up to speed quickly have pushed corporate trainers and other I&KM pros to adopt a new approach that we call immersive learning simulations (ILS). This umbrella term, coined by The eLearning Guild, includes interactive learning tools that:

- **Represent a real-life situation.** The purpose of a model is to enable users to draw conclusions about the real system by studying and analyzing the model. For example, an online simulation of an in-flight emergency or a soft-skill simulation on making a sale both put the learner in a simulated environment where they must make decisions based on events, receive feedback on the quality of their decisions, and have an opportunity to try again and learn from their mistakes.

- **Combine simulations, learning, and competition.** The eLearning Guild defines ILS as "an optimized blend of simulation, game element, and pedagogy that leads to the student being motivated by, and immersed into, the purpose and goals of a learning interaction."[1] The critical component is the balance between the learning and gaming elements. The learner often encounters unexpected events that change the situation and require decisions based on knowledge gained during the ILS. Learners might receive points based on their choices, which are recorded by the system.

- **Use "serious games" to engage employees.** Some ILS are a subset of "serious games," which include games for marketing, healthcare, social issues, and advertising. The goal of these games is to use a gaming engine with gaming designs to engage and motivate players when the primary purpose is not entertainment.[2]

Immersive Learning Simulations Engage Learners

Well-developed ILS provide an opportunity for learners to think critically, solve problems, and draw meaningful conclusions. There are several interactive learning approaches (see Figure 1).

Evaluate your learning offerings on their immersion by placing them in the appropriate quadrants, depending on the degree of learning and simulation. Not all courses or modules will be in the upper right quadrant. Some learning activities achieve their objectives through limited simulation, and other content may not be appropriate for simulation; for example, simulations don't help much for simple checklists. Successful ILS enable learners to:

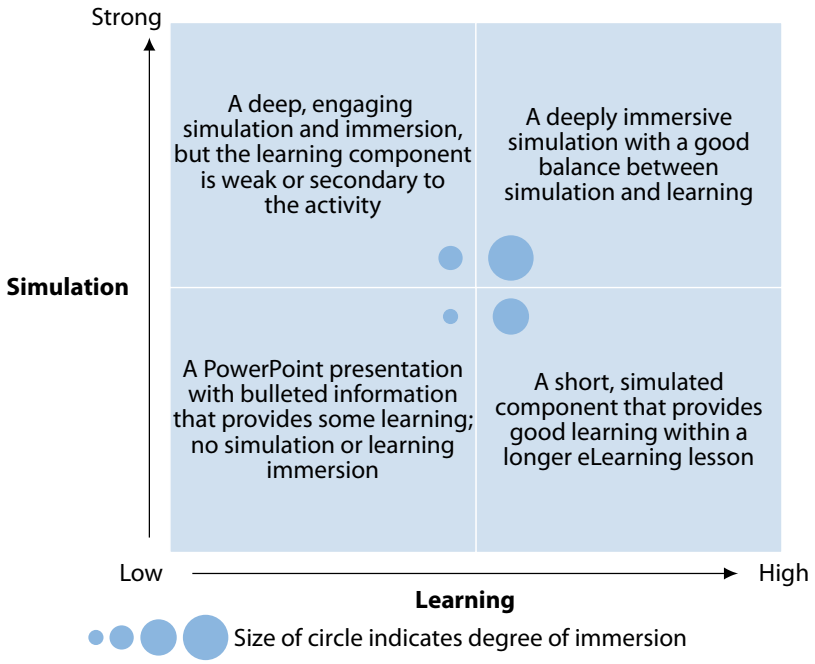
- **Interact with real-life scenarios via the computer.** Learning simulations present interactive models of processes, events, or circumstances found in the real world that have defined learning outcomes. Simulations allow learners to manipulate variables that change the state of the model, and good simulations evoke natural responses similar to real life. For example, scenarios may simulate leadership communication situations for new executives. After the executive has completed a sequence, the program evaluates the learner's responses, branches to appropriate learning, and provides another simulation sequence to test the executive's comprehension.

- **Learn from mistakes and try again.** Simulations build upon that old saying "learn by doing instead of being told." Just as one learns to ride a bicycle after many tumbles to the ground, users learn from simulations by making choices, getting feedback, and trying again in this nonthreatening learning environment. Some learners indicate that by making errors, the branched explanations, visuals, or videos help them learn even more than if they had completed the simulation flawlessly. For example, the safe simulated environment allows employees to practice financial business activities or emergency response procedures without putting the organization at risk.[3]

- **Become motivated by goal-oriented simulations.** Good simulations pack a double motivation. First, effective designers create context around the simulation and make it intrinsically engaging. ILS must engage and motivate the player through good design. Then, the simulation immerses the learner in an enjoyable but challenging activity. A simulation should also help the employee achieve a sought-after goal. For example, customer service representatives may be motivated to take a challenging customer simulation in order to learn new procedures for handling difficult customers. Their goal? To increase their personal customer service success rate.

- **Experience competition through appropriate games.** Simulations confront users with problems or issues and can become games when structural elements like rules, competition, and winners are included. The competitive game approach requires observation, hypothesis testing, or strategy development by the learner to score well. The players are submerged in a motivational learning and working ecosystem that allows them to practice in a safe environment.

Figure 1 A Model For Simulated Learning



46051 Source: Forrester Research, Inc.

Millennials Respond To Serious Gaming

As the workforce changes to incorporate more Millennials (workers born between 1980 and 2000), effective training must match the evolving learning styles of employees. With more visual learners and computer-savvy gamers entering the workforce, coupled with business' need for workers to learn quickly through direct work experiences, well-developed simulations are quickly becoming an important element of the training department's tool kit. Simulations are growing in importance because they address the radically different needs of next-generation employees.

Today's young employees are pragmatic when it comes to learning. They want information immediately that will help them master their work; they like problem solving; and they want to interact with their colleagues. Plus, they are more likely to respond to visual interactions and are often averse to excessive reading. In total, they have very different minds from previous generations.[4] Gaming and simulated environments have defined Millennials' playground and personal life since they were very young. Many are sophisticated gamers and are active in online social networks like Facebook and MySpace. They expect engaging online learning and resources that allow them to take control of their learning.[5] (And what about older employees? Even those more accustomed to classroom training usually develop an affinity for and learn from immersive simulations.)

Immersive Learning Simulations Stimulate Broad-Based Skills

The existing research on ILS indicates that:

- **Simulations and games affect learners' intellectual, visual, and motor skills.** Positive effects of ILS include critical thinking and problem-solving skills, the ability to draw conclusions, and some inductive discovery skills like observation and trial and error. ILS also affect student engagement and interactivity, which are important to positive learning environments.[6]

- **Learners acquire intellectual skills and cognitive strategies during ILS.** Some games require only simple skills such as word or visual recall rather than higher-order thinking skills, and they provide environments that encourage winning by guessing. ILS requires strategic thinking and manipulation of variables that immerse the learner in challenging and thought-provoking situations that can lead to a successful game outcome.

Immersive Learning Simulations Are Worth The Extra Expense

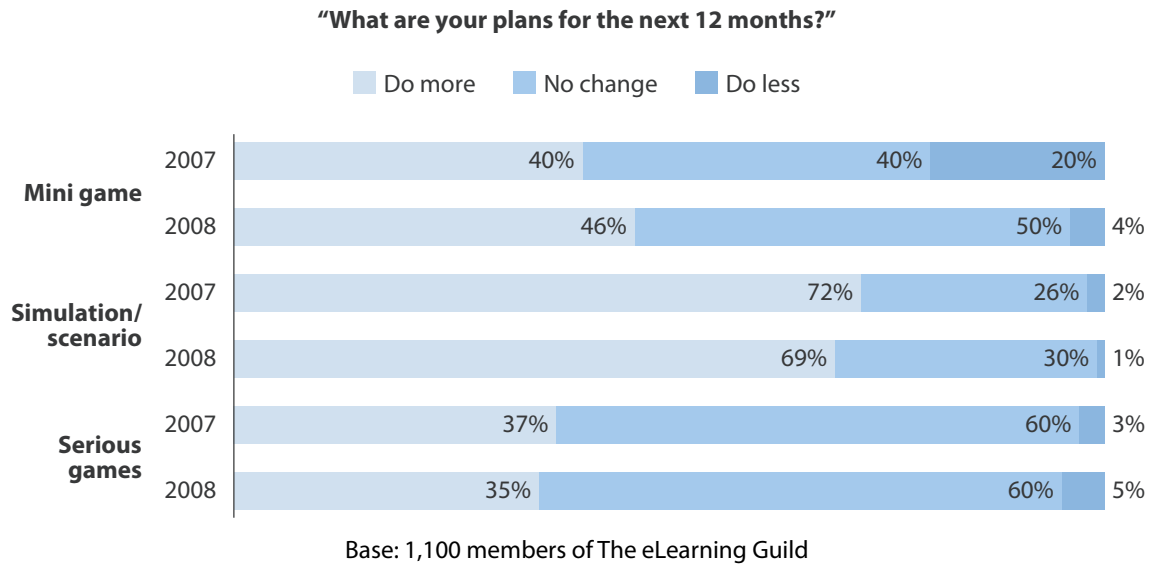
The eLearning Guild's recent 1,100-member survey indicates generally positive results from practitioners who are creating or deploying immersive learning simulations (see Figure 2).[7] The eLearning Guild members, comprising individuals (not organizations) from corporate training, K-12, and higher education, say that:

- **ILS work.** More than 93% of the 380 members who are actively creating ILS indicate that the learning results were somewhat or much better than other forms of rich skill practice. In terms of ROI, 53% said it was too early to know. But of the 47% who had ROI results, three-quarters said they received a modest or very good ROI.

- **The cost is less than most developers expected.** Flight simulators can cost millions of dollars, and this commonly known fact scares training departments from considering this technology for learning. Generally, The eLearning Guild members who had not created ILS estimated a higher creation cost than indicated by those members who had created one. The median cost per learner for an ILS was $102, and the average cost per learner was $282.

- **The eLearning Guild members are excited to do more.** Seventy percent of The eLearning Guild members plan to create short and simple simulations, simulated conversational role plays, mini games, and even some 3D immersive worlds of learning. But members want to see more corporate examples of good eLearning games and simulations. Anecdotal member information indicates that some large organizations are embracing ILS but are hesitant to share examples because they view these ILS as a competitive advantage.

Figure 2 The eLearning Guild Members Plan To Do More



Base: 1,100 members of The eLearning Guild
Source: The eLearning Guild, "Immersive Learning Simulations," March 2008

46051 Source: Forrester Research, Inc.

IMMERSIVE LEARNING SIMULATIONS INCLUDE ROLE PLAYING AND VIRTUAL WORLDS

The following four types of simulations may be operational or conceptual simulations, with linear or branched learning sequences. These simulation types range from simple, linear process simulations to immersive, 3D-game-based learning simulations.

1. **Software simulations effectively train end users on new software applications.** In addition to facilitating a high degree of learner interaction, software simulations offer learners the opportunity to practice the new software application in a low-risk environment without affecting real data. These simulations are confidence builders and enable learners to self-assess whether they're ready to use the new software on the job.

2. **Role-play simulations put learners in situations where they must interact.** These story scenarios require learners to make decisions based on the roles they portray and the information they gain from their role-based dashboard and then deal with the consequences. Often, characters (which can be videos of real people, animated characters, or still shots of people — all with engaging audio) interact with the learners who must choose a response. The computer gives them feedback on their choices. For example, a role-play simulation may be used in training for employee selection (see Figure 3 and see Figure 4).

Figure 3 Use Research Tools To Select The Best Candidate

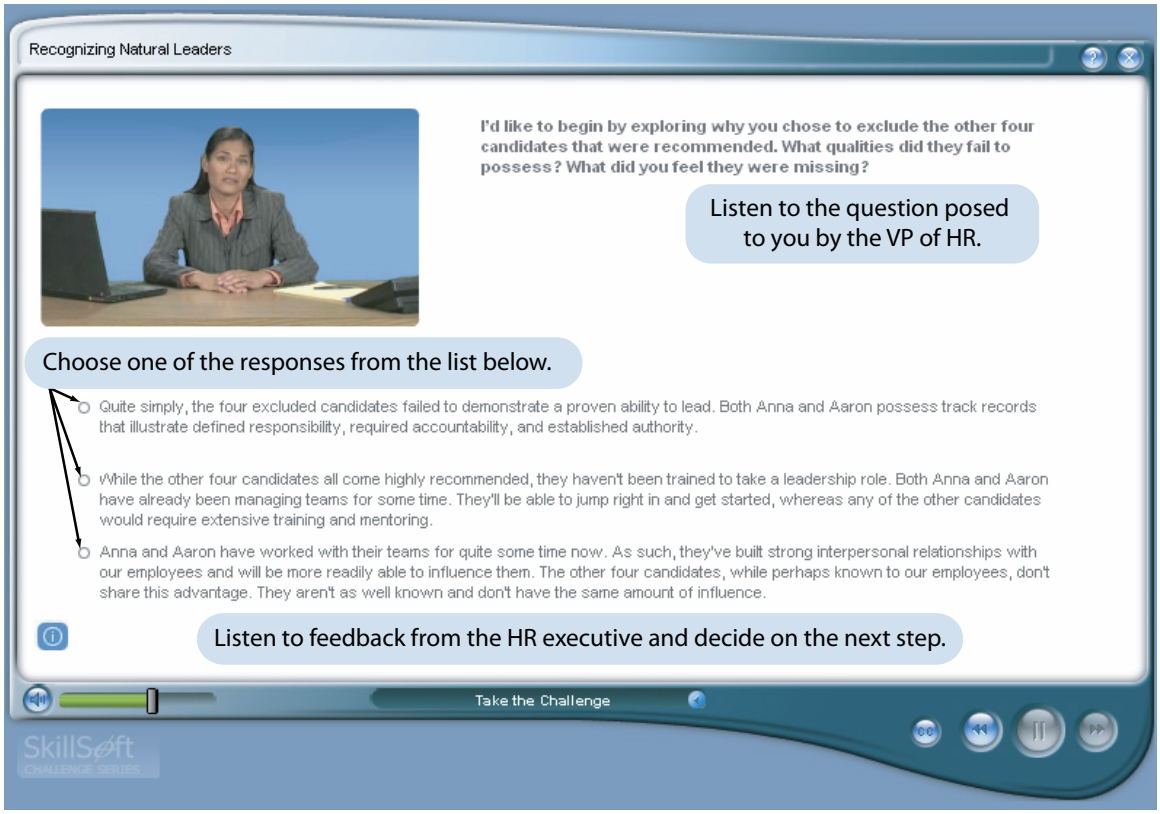
As a new director, you must make a decision on a finalist candidate that shows the best leadership qualities. You have tools on your dashboard to learn about the finalists and help you make the best candidate choice.

Source: SkillSoft (www.skillsoft.com)

46051 Source: Forrester Research, Inc.

Figure 4 Defend Your Candidate Selection

You must support your candidate decision by choosing the best responses to the VP of HR's questions. This is the first of a number of screens in the simulation. You get feedback on each decision you make.



Source: SkillSoft (www.skillsoft.com)

46051 Source: Forrester Research, Inc.

3. **Spreadsheet simulation focuses on interactive business issues.** These issues may include areas like supply chain management, product life cycle, accounting, and business acumen. They require learners to make business resource allocations and modifications and watch the results play out on graphs and charts. They are subtle, unpredictable, and variable, which in many cases contributes to a strong simulation with accompanying time pressure.

4. **Immersive learning simulations act as learning games.** ILS add the competition, fun, and tension of a game to the simulation in an instructionally sound way that promotes learning. Often, these simulations are in a 3D world, and the learner moves through the environment, receiving advice, making decisions, and earning points for successful decisions. For example, a hotel may use simulations to train its new employees (see Figure 5).

Figure 5 Virtual Training For New Hotel Hospitality Employees

Employees provide assistance to customers throughout the lobby. Here the new employee learns the preferred way to ask a guest if he or she can help him. The employee chooses one of three options and receives feedback.

Source: Virtual Heroes (www.virtualheroes.com)

46051 Source: Forrester Research, Inc.

Lessons Learned From Companies Using Immersive Learning Simulations

To understand best practices and lessons learned, Forrester interviewed several organizations that are using ILS. Some use off-the-shelf simulations, some create their own, and some use a custom developer (see Figure 6). Off-the-shelf simulations are a good way to start, especially in soft-skill areas. Easy-to-use creation tools that don't require programming skills help subject matter experts and trainers develop simple simulations. For content that is more complicated or will have a long shelf life, a custom content developer may be the right choice. Here's what we learned:

- **Federal Reserve Bank's training simulator augments formal learning for bank examiners.** Driven by stakeholder interest, a desire to provide a safe learning environment prior to applying skills in more complex work assignments, and a declining number of real-world, on-the-job learning opportunities, Federal Reserve Bank of Cleveland investigated simulations as a method for training future bank examiners. These business drivers were coupled with the strategic objective of accelerating the learning curve. They wanted to get examiners fully functional and able to demonstrate the ability to be in charge of an examination, which takes a long time to complete through traditional methods, at an earlier stage in their career.

Simulations speed up this process and give employees ample opportunities to practice in a virtual environment at their own pace and learn from their mistakes. Federal Reserve Bank chose a vendor that provides the simulation software and technical support to create a custom simulation that will integrate with the bank's learning management system.

Lessons learned: Secure stakeholder support before you begin. Content planning is the most critical component for success. Money for a proof of concept helps stakeholders understand what they are getting for their money. Identify dedicated resources such as a project manager, IT personnel, and instructional designers to work with a custom developer to assure that the product meets client needs.

- **Bank of America uses an off-the-shelf executive immersion simulation with on-site teams.** The goal of the simulation is to identify areas of improvement for employees in a high-potential leadership program. During the simulation, participants evaluate scenarios, partner and collaborate, and make financial and people-based decisions. Participants take on many roles during the simulation, which closely resembles a typical business environment and feels like real life. With facilitation from an on-site mentor, participants reflect on their experiences and expectations and translate them into their financial work environment.

Lessons learned: These immersive simulations provided insight into employee behavior in a competitive market. This learning experience tested a variety of skills simultaneously in a hands-on work environment and left learners with an experience they will remember. Overuse of simulations can reduce effectiveness, so choose key points in which to use simulations to evaluate employees' skills and target development opportunities.

- **Disaster brings simulations to East Jefferson General Hospital in New Orleans.** A large check-in-to-checkout technology conversion was scheduled for implementation using classroom training at East Jefferson General Hospital on the day Hurricane Katrina hit New Orleans. The mass exodus of personnel left the hospital with insufficient training staff for classroom training. Since the hospital had already used OutStart for some eLearning development, they now embraced simulations through a team effort with subject matter experts (SMEs), trainers, and technical people. As a result, they created 500 three-to-four-minute technology process simulations using OutStart's software simulation tool, SoftSim.

Lessons learned: Short, focused simulations led to more use because learners could find specifically the information they needed. Employees who didn't use technology regularly had to be motivated to learn online. In this hospital's case, the motivation was greater speed to competency, lack of classroom seat time, and pressure to become trained on the new system in order to carry out their daily work. This transition from classroom instruction to online simulations was a major paradigm shift. While more preparation time is optimal, learners in this case made the change quickly under pressured conditions.

- **A financial services firm combines custom and in-house-developed simulations.** The eLearning development team in a large, global financial services firm wanted to develop social simulations or role-play learning in the soft-skills area. The team wanted sophisticated branching capabilities and chose NexLearn because the company could produce custom content but also sold its SimWriter tool. This financial services firm now uses SimWriter to update custom content and to create new simulation content.

Lesson learned: Companies can have simulations without going into debt. Outsource the simulation development, but do as much of the idea creation and writing as possible in-house. The development team should include an SME who knows the content, an instructional designer who understands principles of adult learning and basics of branching simulations, and a graphic designer. If you are doing simulated games, a gaming expert is a key person. Writing for branching content is difficult, so develop a template storyboard after a few successes to speed up the creation process.

- **Sun Microsystems created a game for employee onboarding.** Half of the new hires at Sun Microsystems are geographically dispersed and work away from the company offices. This presented a challenge in creating a cohesive experience for new staff. Tasked with the learning goal of creating experiences that would teach new hires about the business, Sun training staff decided to create a game. The 60-to-90-minute game was built around five levels, each representing one of Sun's five businesses. Sun now makes the site public so future recruits can find out about the company. Along with in-house technology, Sun tasked Enspire Learning with providing the game expertise.

Lessons learned: The biggest challenge with games is to balance the play and the learning to create the right mix. Bring in game designers to work with traditional instructional designers who usually do not have the expertise for creating learning games. C-level executives must be supportive and willing to allow experimentation with unusual approaches, including content on handhelds and phones, that engage people in different ways.

SIMULATION CREATORS MUST LEARN GAME DESIGN PRINCIPLES

There are a number of issues to think about as you embark on developing simulations:

- **Balance the motivation and the learning.** The challenge of the simulation designer is to blend the motivational and instructional features so that the challenge, fantasy, and game elements don't undermine the learning. The risk is distraction and overload in a way that is counterproductive to the intent of the simulation or game. Some highly exploratory games lead to a lot of interactivity but in some cases little learning. For example, in a game on improving the environment, some learners became so engrossed in the threatened animal component that they failed to achieve the goal of understanding the balance necessary for a sound environment.

- **Match simulations to the learning goals.** If the learning goal is to develop speed and promote fast recall, simulations work well. Games add a time factor, and learners get points depending on how accurately and quickly they recall information. Sales staff, for example, enjoy the competition of playing against their colleagues and learn the vocabulary and other factual product information as they play.

- **Make success critical to progress.** Content designers must make sure that the simulation has interactions that promote learning, rather than just interactions based on the idea that that's what a simulation should have. Judge the success of a simulation not on the amount of activity but on the learning that the activity promotes. Incorporate instructions by giving some feedback and then ask the user to try again. Encourage content reflection after some correct responses by asking the user to select the best reason why the answer is correct. Manage complexity by moving from simple to more difficult. Provide instructional support throughout the simulation by giving suggestions as to what resource a user might access.

VENDORS PROVIDE AN ARRAY OF OFFERINGS

Enspire Learning, Forterra Systems, Harvard Business Publishing, NexLearn, PlayGen, Qube Learning, SkillSoft, and Virtual Heroes are some of the vendors that provide custom-developed or off-the-shelf ILS content. Many vendors also offer free demos of their simulations, which can be accessed through their Web sites.[8] For in-house simulation creation tools, Flash is popular, as well as Captivate, SimWriter, SoftSim, and ToolBook.

Figure 6 Vendor Offerings

Vendor	Description	Cost
	Off-the-shelf content	
Harvard Business Publishing (harvardbusiness .org/corporate)	Harvard Business Publishing provides immersive simulation training in leadership and management skills, with topics like managing difficult conversations, negotiating, and leading teams.	The cost is $250 per user per simulation, with volume discounts based on the number of users.
Qube Learning (qube.com)	Qube offers a hosted game-based platform built around customizable games like tic-tac-toe and hangman to master facts and information such as product training, policies, and procedures. Games can be linked to any digital documents. Players compete in a Hall of Fame and for certificates of achievement. All game-based templates are fully customizable to any industry.	The game authoring tool is $14,750 for unlimited game space authoring.
SkillSoft (skillsoft.com)	SkillSoft has a large business and IT skills training library with supporting materials and services. Simulations in its Leadership KnowledgeCenter include topics like solution analysis, decision-making, and team motivation.	A one-year license to the Business Exploration Series Collection for 25 users is $3,776.
	Custom content	
Enspire Learning (enspire.com)	An eLearning content developer that creates custom eLearning, custom and templated simulations, and prebuilt simulations.	Custom eLearning ranges from $15,000 to $45,000 per hour. Simulations range from $150,000 to $500,000 per hour. A prebuilt simulation like Executive Challenge is about $2,000 per user and includes a live coach.
Forterra Systems (forterrainc.com)	Forterra is a custom content developer of ILS using its OLIVE platform. Forterra also sells its OLIVE development platform and 3D off-the-shelf content packs on different topics for customers to create the ir own simulated learning.	Forterra's simulations use 50% reusable content paths, objects, etc. A 15-30 minute learning simulation costs around $200,000. One-time licensing fee ranges from $30,000 to $100,000, and there is a $500 annual user fee per concurrent user.
NexLearn (nexlearn.com)	A custom education software developer that specializes in creating ILS. NexLearn authors new ILS content or will convert existing learning materials. Its off-the-shelf authoring tool is SimWriter.	Custom ILS is $500 to $4,000 per average student seat minute, dependent on media richness and level of student interactivity.
PIXELearning (pixelearning .com)	A technology company that specializes in applying computer games, simulations, and learning designs to create serious games and immersive learning simulations, focusing on both corporate learning and development and business education.	Custom projects vary between $50,000 and $500,000. Off-the-shelf games with subscription-based pricing vary from $1,000 to $100,000.
PlayGen (playgen.com)	A content creation company that develops and deploys immersive simulations, serious games, and 3D virtual worlds for content areas like learning, assessment, and behavior change.	The average cost for development is $200,000 to $300,000, with some costing $1 million and more.
Virtual Heroes (virtualheroes .com)	Creates simulations for learning, serious games, and virtual worlds for the healthcare, federal systems, and commercial markets using its Advanced Learning Technology (ALT) platform.	Development costs range from $50,000 to $3 million.

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Source: Forrester Research, Inc.

Figure 6 Vendor Offerings (cont.)

Tools		
Captivate (adobe.com)	Adobe's Captivate is software that records screen captures, creates computer simulations, and facilitates design of some soft-skills simulations with branching.	The cost is $699 per license, plus $1,300 for unlimited support and upgrades, for about $2,000 total.
SimWriter (nexlearn.com)	NexLearn's SimWriter is an authoring tool that customers can use with minimal training because it requires no programming code knowledge	Licences cost $6,250 to $12,500, based on organization type. Corporate enterprise and developer licenses with unlimited seats are $43,750.
SoftSim (outstart.com)	OutStart's SoftSim is a content authoring tool for high-end software simulation development with branching.	The cost is $4,000 per named developer.
ToolBook (sumtotalsystems .com)	SumTotal's ToolBook is software that provides an integrated solution to create interactive content, quizzes, assessments, and simulations..	Products and upgrades range from $880 to $2,795 per license, based on organization type. Unlimited support and free upgrades are $995 per year.

46051 Source: Forrester Research, Inc.

RECOMMENDATIONS

SIMULATIONS WILL BE A PART OF ONLINE TRAINING, SO GET STARTED NOW

The fast-growing popularity of simulations in the business world is causing I&KM pros to rethink their learning programs. The takeoff of more immersive learning is an outgrowth of the gaming that young professionals do in their leisure time and the world of Web 2.0 and Web3D where users expect to interact rather than receive information. This means that training departments need to:

- **Understand the different kinds of simulations.** Become familiar with the simulation range from simple game recall to software simulations to interactive role-plays to 3D worlds. Review vendor demos with your learning development team, and discuss the benefits and challenges for your organization.
- **Review your existing content for simulation conversion.** Determine if there are some learning components that would be more effective if converted to simulations. Assess if training staff can handle the content conversion in-house, or whether you should outsource the content development.
- **Examine future learning plans with an eye toward adding a simulation component.** Continually look for opportunities where simulations fit well. License an easy-to-use simulation creation tool, and encourage staff to experiment with it.
- **Find out about off-the-shelf simulations that fit your learning needs.** Many of these pre-produced simulations have supplemental materials and online mentors. Plan a pilot with a

small group of employees as a proof of concept. Conduct an evaluation around acceptance, learning, and engagement.

- **Gain support from executives.** Hire staff who understand immersive learning simulations. Support them in developing simulations to use for learning, as well as in other parts of the organization. The broad use of this expertise will benefit other departments and increase the awareness and value of simulations.
- **Develop a training team that believes in the value of a blended approach.** Don't forget about the other learning formats. Use a blend of eLearning, simulations, and classroom learning as appropriate to the content and learner needs.
- **Review future learning plans considering a broad palette of production techniques.** Keep pushing the envelope. Look at 3D worlds and Second Life. Encourage staff to explore these new learning approaches that will become even more critical as Millennials continue to enter the workforce.

SUPPLEMENTAL MATERIAL

Companies Interviewed For This Document

Adobe Systems
American Research Institute
Bank of America
Cisco Systems
Coalescent Technologies Corporation
East Jefferson General Hospital
Enspire Learning
Federal Reserve Bank of Cleveland
Forterra Systems
Harvard Business Publishing
Hilton Garden Inn Hotels
NexLearn
OutStart
PIXELearning
PlayGen
Qube Learning
SkillSoft
Sprint University
SumTotal
Sun Microsystems
Virtual Heroes
Wharton School

ENDNOTES

[1] For additional information, see The eLearning Guild's "360° Report: Immersive Learning Simulations." Source: The eLearning Guild (http://www.elearningguild.com/research/archives/index.cfm?action=view&frompage=1&StartRow=1&MaxRows=40&selection=doc.30).

[2] Video games are an effective way to reach customers and employees. See the August 19, 2008, "It's Time To Take Games Seriously" report.

[3] For a description of how emergency responders learn through simulations in a virtual world, see the April 18, 2008 "Web3D: The Next Major Internet Wave" report.

[4] For more research on characteristics of the new workforce, read *Right-Brained Children In A Left-Brained World* by Jeffrey Freed and Laurie Parsons, and *A Whole New Mind: Why Right Brainers Will Rule The Future* by Daniel H. Pink. Source: Jeffrey Freed and Laurie Parsons, *Right-Brained Children In A Left-Brained World*, Simon & Schuster, 1998; and Daniel H. Pink, *A Whole New Mind: Why Right Brainers Will Rule The Future*, Riverhead Trade, 2006.

[5] The professional workforce is dramatically changing as a new generation of younger, college-educated workers launch their careers. The group of 48 million Gen Xers is too small to replace the legions of exiting boomers, and the young, tech-savvy generation behind the Gen Xers (known as the Millennials or Gen Yers) has entirely different work expectations from earlier generations. See the March 4, 2008, "The Workforce Is Changing: What Are You Doing About It?" report and see the September 30, 2005, "Get Ready: The Millennials Are Coming!" report.

[6] Long-term game playing has a positive effect on students' learning. For more information, read *Games and Simulations in Online Learning: Research and Development Frameworks* by David Gibson, Clark Aldrich, and Marc Prensky. Source: David Gibson, Clark Aldrich, and Marc Prensky, *Games and Simulations in Online Learning: Research and Development Frameworks,* Information Science Publishing, 2006.

[7] The eLearning Guild's March 2008 "360° Report: Immersive Learning Simulations" is a comprehensive survey and analysis on the development and use of learning simulations and learning games of 360 members who are actively engaged in using these immersive learning technologies. Source: The eLearning Guild (http://www.elearningguild.com/content.cfm?selection=doc.1).

[8] Many ILS vendors offer demo simulations right through their Web sites: See Harvard Business Publishing's online simulations (http://ww3.harvardbusiness.org/corporate/demos/simulation/), SkillSoft simulations from the Business Impact and Challenge series (http://innovations.skillport.com/html/bes.html), Enspire Learning's Executive Challenge simulation (http://www.enspire.com/simulations/exchall_documentary), NexLearn simulations (http://www.nexlearn.com/?q=node/62), and Qube Learning's hangman game from the Sales Skills program (http://qube.com/playground/Games/gameobjects/hangman/SolutionSellingModel/Hangman/launcher.htm).

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