E-learning
Simulations
BRINGING CASE STUDIES ALIVE

By Ariana Bradford

The recent development of a customized, Web-based change management simulation for Rotman's Health Leadership Program prompted **Ariana Bradford** to take a closer look at the world of computer and Web-based simulations. What she found is that these dynamic learning tools can significantly boost users' ability to retain and apply knowledge.

Terms like 'virtual classrooms', 'simulations', 'predictive models' and 'Web-based learning tools' are popping up everywhere in the world of executive education today. For those in the e-learning field, the differences between these terms is obvious – but for the rest of us, the terms are often used interchangeably and incorrectly, making the benefits of each unclear.

When it comes to e-learning, Rotman's Executive Programs division tends to focus on computer or Web-based simulations, only as one piece of a bigger pie that includes a range of learning approaches, from traditional classroom lectures to group projects and case studies. The goal is to offer "blended learning, where participants are exposed to a range of approaches, each reinforcing the other," explains **Michael Hartmann**, managing director of Executive Programs.

"The simulations used at Rotman can best be described as living case studies, where users gain hands-on experience through decision-making practice fields," explains **Greg Warman**, senior partner at change-simulation developer ExperiencePoint, which developed the simulations used in Rotman's Change Management and Health Leadership programs.

The simulations focus on the change management process, and are distinctly different from most other types of simulations, such as the more traditional 'decision-tree' or 'pick-your-own-adventure' variety. Other forms of e-learning – including online textbooks and distance classes that might include audio, video, notes and opportunities for online discussion – have distinctly different objectives. While distance classes may allow users to access learning remotely and in a more cost-ef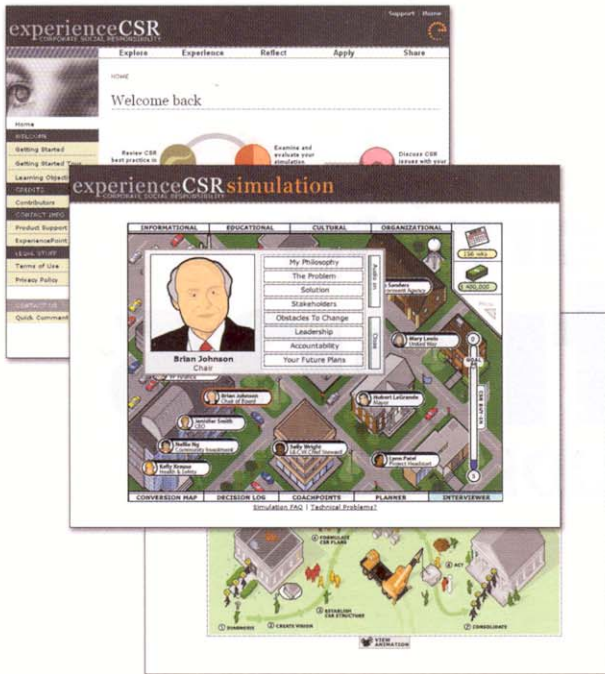fective way, simulations are used to reinforce classroom content and condense timeframes, thereby highlighting the link between an individual's decisions and their effect on business outcomes or results.

Even within the area of situational simulations, differences in learning objectives result in simulations that may emphasize a *prescriptive* over a *descriptive* approach to decision theory, for example. Warman explains that ExperiencePoint has chosen to create simulations that are both realistic and prescriptive. "Our models assume that there is a right way of doing and thinking about processes such as change management, which allows our designers to build-in measures for assessing and evaluating a player's level of understanding."

The time between making decisions and seeing the results of a change management initiative is condensed significantly, resulting in a clearer link between actions and outcomes. Ultimately, knowledge retention and the ability to apply the learnings is high.

Joseph D'Cruz, director of the Health Leadership Program and Rotman professor of strategy, says users also gain from being part of a team-based learning model where most of the learning is driven by team members, as

list of instructions or rules, but also the game board and pieces, dice and hotels. The interface must engage and explain at the same time.

The creators then focus on the development of the model. This is perhaps the most complicated and challenging part of the process. The designer must combine the scenario with the inputs, process and outputs and develop a mechanism that will allow the simulation to provide useful and detailed feedback to the user. "There is always a risk at this stage that the model can become too complex and the critical link between cause and effect is lost," explains **James Chisholm**, ExperiencePoint's senior partner responsible for design and development.

Finally, users' progression through the game must be considered. If the game will be played in teams, for example, then special attention must be paid to this. Validation and testing occur on an ongoing basis, and Rotman MBA students are often asked to play through the game and provide feedback. Developers also rely on close communication with a number of knowledge experts — faculty or real-world practitioners — who can evaluate and ensure that the learning outcomes are being met.

Developing a simulation requires input from coders, graphic designers, project managers, editors and case writers. In some cases, a simulation can be completed in as little as six weeks — but a more likely scenario is three to six months, says Warman. Not surprisingly, the cost is high, ranging anywhere from $250,000 to $1 million. As a result, simulations — while often customized — generally need to have a reasonable built-in shelf-life and be able to be used by a range of users.

In addition to the change management simulations, Executive Programs faculty have used other computer-based simulations. Prof.

D'Cruz, for example, developed the Excel-based Multinational Strategy Game — a one-day, team-based global strategy simulation.

Warman notes that the Rotman teaching facilities are particularly suited to running simulations, with classrooms, breakout rooms, computers and supporting materials all available and appropriately configured. Hartmann adds that this close attention to creating a suitable environment for the simulations is "part of the larger goal of ensuring successful blended learning."

Readers can experience a 'living case study' by visiting www.experiencepoint.com/rotman. For questions or feedback on the simulation — or to learn more about how simulations are customized and integrated into Rotman Executive Programs content — please send an e-mail to abradford@rotman.utoronto.ca.

opposed to faculty. "This is a model that works well at Rotman, where our students often learn best from each other," he says. The simulation for the Health Leadership Program is crafted in such a way that participants will be able to take it back to their workplace and run it with their own internal teams, he says.

The creation and development of a simulation is a complex process. Typically, developers begin by working with program faculty to determine the learning outcomes. These are then subdivided under several headings, including knowledge, skills, and behaviours. The outcomes remain the central focus of the simulation, even as the developers begin researching and conducting interviews and focus groups.

The next stage is design. A simulation scenario or 'story' must be created. "What's critical here is that the scenario is able to hook a user's head and heart," says Warman. Developers must also consider the interface at this point — how the user will interact with the game. The goal is to shorten the time that the user needs to comprehend the simulation as much as possible. Warman compares the components of the interface with the game Monopoly. The interface equals not only the